

## Freight Increases to Cause Extra Expense To Fertilizer Trade

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON, D.C.—In a ruling Aug. 6, the Interstate Commerce Commission granted the railroads on a permissive basis to increase their tariffs on shipments of fertilizer as follows: On Eastern roads a 14% advance; on Western lines a 12% increase and on Southern lines 9%. The new tariffs can be made effective 15 days from date of this Aug. 6 ICC action.

There is small comfort to the fertilizer industry that the increases permitted did not fully meet the request of the carriers. There is little comfort seen in the fact that the ICC stated that it did not feel obligated to approve rate increases to give the carriers any stated rate of return on their investments. According to ICC, the approved permissive rate boost reflects only proven cost increases which have been submitted by the railroads.

This bad news for the fertilizer industry is seen as not the last item on the debit side of the ledger. In issuing its ruling in favor of the carriers, IOC has left the door wide open for the railroads to come back later this year to present other cost increase data which it clearly expects to develop as further wage increases are granted to railroad operating workers and the full impact of high prices for steel and cement are passed on to the railroads.

In this action the ICC has indicated a new approach to rate boosts

## Nasal Botfly of Sheep Controlled by Systemic Insecticide, USDA Says

WASHINGTON — The nasal botfly of sheep may some day be more effectively controlled through the use of a new systemic insecticide, recent tests by the U.S. Department of Agriculture indicate. This material, Dow ET-57, is the same systemic that entomologists have found to be effective against cattle grubs.

Although the product as a systemic agent against sheep nose bots is not recommended by the Department for general use, it appears to be effective, scientists of USDA's Agricultural Research Service report. It is given to sheep by mouth. In New Mexico, where tests are continuing, an estimated 90 to 95% of adult sheep are infested with nasal botflies at some time in their life.

In the experiments, USDA researchers administered the insecticide with a dose syringe to 28 ewes heavily

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which may be significant at some later date for the fertilizer industry but at this time carries little weight. It appears to be more selective in its approved increases since it has issued more "hold downs" by commodity grouping.

For example in the fertilizer field, ICC has ordered a hold down for phosphate rock to 40¢ a net ton and potash to 75¢ a net ton. This exception is believed to result from the fact that both these commodities are heavy tonnage items on railroad traffic and consequently this slight concession.

On the other hand, however, IOC has placed a heavy impost on mixed fertilizer shipments by approving the new permissive rates noted above. This means that the mixed fertilizer and ingredient manufacturer will be faced not

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## NAC Convention Agenda to Cover Marketing, Sales

WASHINGTON — The relation of marketing problems to progress in the agricultural chemicals industry will be stressed at the 24th annual meeting of the National Agricultural Chemicals Assn. at Spring Lake, N.J., September 4, 5 and 6, the Association office has announced.

The meeting program will consider the role of credit versus cash payment for pesticides, the effect of research on expanding markets, and communications techniques for market development and for boosting product sales.

The program Wednesday, Sept. 4, will feature the president's address by Fred W. Hatch, manager, agricultural chemical division, Shell Chemical Corp., and NAC president; an illustrated report by members of the NAC staff; a report entitled, "Sales, 86 million—No Credit Department," on how to get farmers to pay cash for pesticides, by W. H. Prigmore, assistant general manager of Eastern States Farmers' Exchange, Inc.; and a talk on "Research Brings Addition-

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## Little Good Is Seen in Soil Bank for 1958

Washington Observers Think of Situation as Similar to Last Year

By JOHN CIPPERLY

Croplife Washington Correspondent

WASHINGTON — The first formal announcements of proposed general terms for the soil bank for 1958 have brought reactions here indicating that the arrangements for next year will make little if any difference in consumption of plant foods and pesticidal chemicals. Crops affected by the 1958 soil bank include grains, annual grasses cut for seed, oilseeds, cowpeas, potatoes, commercial vegetables, canning peas and beans.

This 1958 program imposes a cross-compliance between field crops and the row crop lands on the basis of a total farm acreage of those crops in the base years 1956-57. Farmers participating in the soil bank in 1958 either through the acreage reserve program or the conservation reserve program, will be required to agree not to plant acreage in excess of that base period acreage of the total cropland for the soil bank crops enumerated above.

On the surface that would appear to be a new lower ceiling on probable consumption of plant foods and pesticidal chemicals since it would freeze the individual farm operation to the 1956-57 farm use base for the soil bank crops.

However, that surface observation does not take into consideration the sharply reduced availability of money for the soil bank in the 1958 crop year. Total funds available to the soil bank this year in new funds will be a maximum outlay of \$500 million of

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## Middle West Soil Group Invited to Join NPFI

CHICAGO — A formal proposal to the Middle West Soil Improvement Committee for its consolidation with the National Plant Food Institute, was made July 25 by John A. Miller, Price Chemical Co., Louisville, Ky., NPFI president. Mr. Miller made the presentation before the MWSIC board of directors, outlining details of the plan which would make the Middle West Soil Improvement Committee the Midwest Regional Office of the NPFI under the latter's new program of education and promotion.

According to Zenas H. Beers, executive secretary of the Middle West group, its board is studying the matter carefully and will discuss it further on August 15 when the board is scheduled to hold its next session. Mr. Beers said even though a decision might be reached at that time, the membership of the MWSIC must confirm the action of the board before any move would be final. Such consent could be given when the group

holds its annual business meeting in Chicago in October.

In addition to establishing a mid-western office, the Plant Food Institute has announced that it expects to open additional offices in the far west, the south and the east to carry out the program outlined at the group's June meeting at White Sulphur Springs, W.Va. No definite locations for these offices have yet been announced, however.

## Irrigation and Fertilization Make Good Partners, Alabama Conference Is Told

AUBURN, ALA. — Irrigation and fertilizer were described as partners in high crop production by research workers in talks and during tours of experimental projects at Auburn's annual fertilizer conference July 30-31.

Nearly 200 members of the Alabama fertilizer industry heard summaries of current research in soil and agronomy during the conference which opened with a speaking program and tour at the main station of the Alabama Polytechnic Institute agricultural experiment station system and closed with observation of important research at the Thorsby Foundation Seed Stocks Farm and the Chilton Area Horticulture Substation in central Alabama.

Dr. Howard Rogers, head of the experiment station's agronomy and soils department, called the two-day meeting one of the best fertilizer conferences ever held in Alabama.

Attendance was a near record, he said.

A highlight of the opening program was the presentation of a \$200 National Plant Food Institute scholarship to Leon Hartwell Allen, Opelika, Route 1, who is majoring in agronomy and soils in the API School of Agriculture. The award, given annually to the outstanding junior studying agronomy and soils at API, was presented in behalf of the Institute by Frank Boyd, Montgomery, president of the Alabama Soil Fertility Society.

Dr. Robert W. Pearson, principal soil scientist of the soil and water conservation division, USDA Agricultural Research Service, told members of the Alabama fertilizer industry that results of studies in southeastern states show that response of crops to added moisture and plant nutrients

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Harold R. Colwell

**ADVERTISING DIRECTOR**—Harold R. Colwell has been named director of advertising and market research at Vulcan Containers Inc., of Bellwood, Ill., according to Vern I. McCarthy, Jr., vice president. Mr. Colwell will be responsible for market planning and research, advertising programming, new product development for the company's Bellwood, Illinois, and Toronto, Canada plants for both their steel pail and tin can divisions. The firm specializes in the design and manufacture of steel shipping drums and pails for chemicals, and other products and tin plate cans for various specialties. Mr. Colwell is a graduate of the State University of Iowa.

### Fertilizer Statistics Presented in New USDA Volume

WASHINGTON, D. C.—A compilation of data on fertilizers and liming materials has just been completed by A. L. Mehring, J. Richard Adams, and K. D. Jacob, Soil and Water Conservation Research Branch, ARS, U.S. Department of Agriculture, Beltsville, Md. Designated as Statistical bulletin No. 191, the book is entitled "Statistics on Fertilizers and Liming Materials in the United States." It is available from the superintendent of documents, U.S. Government Printing Office, Washington 25, D. C. The price is \$1.

The authors cover the subject thoroughly, with written text and tables. Production, consumption, foreign trade, domestic movement of fertilizers are all described in detail, as are fertilizers in foreign countries, and a section on definitions and terminology.

Tables deal with subjects including nitrogen and nitrogen materials; natural organic materials; phosphoric oxide and phosphate materials; potash and potash materials; secondary nutrients and secondary-nutrient materials; trace nutrients and secondary-nutrient materials; trace nutrients and trace-nutrient materials; mixed fertilizers, all fertilizers; fertilizers in agricultural conservation programs; U.S. Tennessee Valley Authority fertilizers; fertilizer consumed by counties; movement of fertilizers, and agricultural liming materials.

Comparative figures are presented on the production and consumption of various nutrients, both foreign and domestic, as far back as 1850 through 1954.

The authors note that the statistics contained in the book were obtained from many sources, both official and unofficial, including unpublished material compiled in the Soil and Water Conservation Research Branch of USDA. A completed bibliography is provided and an index permits the reader to locate various statistical data carried in the book. Including the index, the volume is 182 pages in length.

## Western Phosphate Appoints Two

GARFIELD, UTAH—Two new appointments at the Garfield, Utah, plant have been announced by E. I. Lentz, vice president and general manager, Western Phosphates, Inc.

George H. Reid has been made plant manager to succeed E. R. Scammell, resigned. Mr. Reid has been production superintendent of the Garfield plant since operation began in 1953. He was graduated in 1949 from the University of California with a B.S. degree in chemical engineering. He was employed by Stauffer Chemical Co. at Richmond, Cal. and Tacoma, Wash. from 1947 to 1953 when he joined Western Phosphates, Inc.

James A. Malloch has been promoted from maintenance superintendent to chief engineer with responsibility for all engineering and maintenance activities. Mr. Malloch joined Western Phosphates in 1953 and was appointed maintenance superintendent for the new plant. He is a graduate of the Massachusetts Institute of Technology.

Western Phosphates, Inc., produces phosphoric acid, triple super-phosphate and ammonium phosphate at Garfield, Utah. It is owned by Stauffer Chemical Company (50%) and Kennecott Copper Corporation and American Smelting and Refining Company (25% each).

### Atkins, Kroll & Co. Shifts Personnel in Sales

SAN FRANCISCO—Atkins, Kroll & Co. have announced several shifts of key personnel. W. A. Ashman, partner, for the past two years resident in Los Angeles, returns to his post at San Francisco headquarters. E. T. Tolin resumes as manager of Southern California operations. He is being succeeded in the New York office by C. E. Tanner, formerly of Wessel Duval Co. R. E. Lowe will continue in charge of fertilizer sales in Southern California and Arizona.

The firm imports "Horse & Lion" nitrogen products and distributes them throughout the country.

### Nitrogen Division Names R. L. Riggs to New Post

NEW YORK—Robert L. Riggs has been appointed manager of the Hopewell, Va., plant of Nitrogen Division, Allied Chemical & Dye Corp. Mr. Riggs, who will succeed Frank A. Ernst upon the latter's retirement Aug. 31, has been manager of the company's Omaha plant. Hopewell is the largest nitrogen plant in the United States.

Virgil A. Peringer will succeed Mr. Riggs as Omaha plant manager, moving up from general superintendent.

## Strong Trend Toward High Analysis Plant Food Mixtures Appear in South Carolina

GREENVILLE, S.C.—The fertilizer picture of South Carolina is changing rapidly, according to Dr. Bruce D. Cloaninger, director of the state department of fertilizer inspection and analysis.

A trend toward the use of higher analysis is pointed out by Dr. Cloaninger. In 1951, for example, 1,700 tons of 4-12-12 were used compared to 3,700 tons last year.

When compared to 3-9-9, which has the same ratio, there is an eight per cent saving for the farmer, he said: "Less filler, less bagging, less freight."

Dr. Cloaninger cautioned, however, that if a higher analysis is used, there is greater chance of injury to plants, and care must be used in placing fertilizer. He recommended placing it below and to the side of the row. South Carolina

## Higher Sales Recorded by American Potash & Chemical

LOS ANGELES—Operations of American Potash & Chemical Corp. in the first half of 1957 resulted in higher sales than in the corresponding period last year, Peter Colefax, president, has announced. Net income also registered a gain, but per share earnings were slightly lower because of increased shares outstanding.

Sales for the six months ended June 30, 1957, totaled \$21,767,046, compared with \$19,956,846 reported at the halfway mark of 1956. Net income amounted to \$2,485,332, equal after deducting preferred dividend requirements to \$1.25 per share on the 1,905,619 shares of Class A and Common stock outstanding. This compared with \$2,396,625 or \$1.39 per share on the 1,647,069 shares of Class A and Common stocks outstanding on June 30, 1956.

Changes in capitalization since June 30, 1956, resulted principally from conversion of the Convertible Debenture issue called for redemption in September, 1956, and the payment of a 3% stock dividend in January, 1957.

### Texas Co. Names New Head of Petrochemicals

NEW YORK—Augustus C. Long, chairman of the board of directors of the Texas Co., has announced the election of L. C. Kemp, Jr., as vice president in charge of Texaco's petrochemical department.

Mr. Kemp previously served as general manager of the department. He is responsible for the company's interests in the field of petrochemicals.

Texaco is presently increasing its participation in the manufacture of petroleum-derived chemicals, including an 180-ton-a-day ammonia plant which will be completed at Lockport, Ill. by the end of 1957. (Texaco owns 50% of the stock of the Jefferson Chemical Co., as well as that of the Texas-U.S. Chemical Co.)

Mr. Kemp joined the Texas Co. in 1929 after graduating from Rice Institute with a B.S. in chemical engineering. He had held part-time and summer jobs with Texaco while a student. His first regular assignment was as a research chemical engineer at the company's Port Arthur, Texas, laboratories.

### RETIRED ENTOMOLOGIST DIES

ITHACA, N.Y.—James G. Needham, 91, professor emeritus of entomology at Cornell University, died July 24 after a long illness. Prof. Needham was a specialist in the structure of insect wings.



James McInnes, Jr.

### James McInnes, Jr. Heads CSC Sales Office

NEW YORK—James McInnes, Jr., has been named manager of the New York district sales office for Commercial Solvents Corp., according to an announcement by James V. O'Leary, general sales manager. Mr. McInnes takes over the post previously held by Mr. Arthur W. Luedeker, who will head the company's new Mid-Atlantic office with headquarters at Newark, N.J.

Located at 260 Madison Ave., the New York district office handles the sale of industrial chemicals, agricultural chemicals, automotive chemicals, animal nutrition products and potable spirits to CSC customers in New York State and Fairfield County, Connecticut.

Mr. McInnes joined CSC in 1933, when the company acquired the Rossville Commercial Alcohol Co. with which he had been associated since 1929. He became assistant manager of the New York district sales office in 1945.



H. E. Causey

**TECHNICAL SALES ENGINEER**—H. E. Causey has joined International Minerals & Chemical Corp. as technical sales engineer with the Agricultural Sales Dept. of the firm's potash division. Mr. Causey will work directly with fertilizer manufacturers, acting as the company's field representative in assisting with the solution of technical production problems. He has been in the fertilizer business for 20 years, and was formerly associated with the Illinois Farm Supply Co., Darling & Co., Chicago, and Ashcraft-Wilkinson Co., Atlanta. Earlier he had worked for International plants located in the west and south



David H. Bradford, Jr.

### Mid-South Names New Sales Manager

MEMPHIS, TENN. — David H. Bradford, Jr., sales manager of Mid-South Chemical Corp., has been named vice president, it was announced by Ellis T. Woolfolk, president.

The action was taken by the board of directors of Mid-South at its recent annual meeting in New Orleans. At the same meeting the board received from Bruce K. Brown, president of Petroleum Chemicals, Inc., an "on-schedule" progress report on construction of a \$12,500,000 anhydrous ammonia plant, which will supply Mid-South Chemical with nitrogen fertilizer beginning early next year. A barge loading dock and four 3,000-ton storage spheres are already in place.

Mr. Bradford has been sales manager of Mid-South Chemical since it was first organized nine years ago. He is a chemical engineering graduate of Mississippi State College, and is on the board of directors of the Agricultural Ammonia Institute.

### Two Range Grasses Look Good in Oregon Tests

CORVALLIS, ORE.—Two range grasses that looked good in experimental trials may be useful on Eastern Oregon range lands, according to a report from the Squaw Butte-Harney branch of the Oregon State college agricultural experiment station.

Scott Cooper, agronomist, has reported that in 1953 to 1956 yield trials, Siberian wheatgrass outyielded the standard crested wheatgrass in all four years. And big bluegrass topped both wheatgrasses in yield the last three years.

The big bluegrass was slower to get started, Mr. Cooper explained, but was a consistent high yielder once established. It starts growth much earlier in the spring than crested wheatgrass but is easily pulled up by livestock—a characteristic that will probably have to be corrected by plant breeders.

Yields in the trials were figured as pounds of air-dry matter, about the same as field-cured hay. Rainfall during the experiment averaged a little over 11 inches a year.

Mr. Cooper also found that tall wheatgrass was a high yielder during wet years, but fell down on yields during dry seasons. In contrast, hard fescue ranked higher during drier years than in wetter years.

### FALL MEETING ANNOUNCED

RALEIGH, N.C.—The Carolinas-Virginia Pesticide Formulators Assn. will hold its fall meeting at the Carolina Hotel, Pinehurst, N.C., November 18-20, according to W. R. Peele, Raleigh, N.C., secretary of the association. Details of the program have not yet been announced.

### Nitrogen on Range Lands Produces Early Growth

SACRAMENTO, CAL.—The early growth factor appears to be one of the most significant factors in range fertilization with nitrogen, according to University of California specialists who are conducting a long-range fertilization survey. Lester J. Berry of the Davis campus and W. E. Martin, Berkeley have found some significant facts in their study.

"Properly fertilized fields not only grow more forage but are ready for grazing weeks ahead of untreated range," Mr. Berry reported. "This permits a cattleman to concentrate his stock in a fourth of his acreage or less, while the rest of the range gets in shape to carry the herd."

Mr. Berry, Mr. Martin and farm advisers and cattlemen in 13 counties from central to northern California are collaborating in controlled range fertilization experiments.

In six tests last year fertilizer

cost per extra pound of beef produced on fertilized pastures was less than 15¢, thus providing a fair margin of profit since most cattlemen sold their animals to feeders for about 17 or 18¢ a pound. In three tests, the cost was 15 to 18¢; in four tests the cost was over 24¢; largely because of loss of fertilizer in ground from the extremely wet season.

"Range fertilization is most efficient when the cattleman can take advantage of other factors such as earlier feed and increased carrying capacity on limited ranges," Mr. Berry said.

But even though they may not be economically feasible, certain other advantages of range fertilization are evident. These include more total forage, better quality forage, and less frost damage, since vigorously growing plants are less susceptible.

Used in the experiments were nitrogen from 60 to 80 lb. an acre,

and varying amounts of phosphorus and sulfur.

The experimenters have concluded that nitrogen alone will do the job except in phosphate or sulfur deficient soils and there nitrogen alone is wasted.

"If natural range needs phosphate it must be added or the grass cannot use nitrogen," Mr. Berry reported.

Phosphorus fertilization of range on which rose, burr or other clovers had been established told a different story. In phosphate-deficient soils, superphosphate alone not only greatly increased clover forage yield but also boosted protein content.

"Over the years, California cattlemen will be using land much more intensively," Mr. Berry said. "Better rangelands will go into grain, hay and irrigated pasture and those left will have to produce much more natural feed."

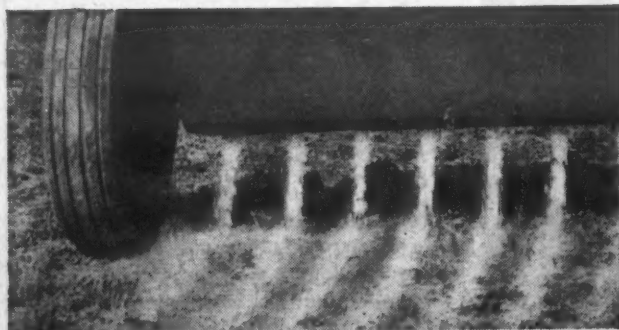
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## INSECT AND PLANT DISEASE NOTES

### Corn Borer Developing Rapidly in Minnesota

ST. PAUL, MINN.—High temperatures have accelerated European corn borer development and an early second brood infestation is likely.

Light to threatening grasshopper infestations have been reported and hatching is probably complete especially in those fields from which the second crop of alfalfa has been removed.

Summer brood emergence of the sweet clover weevil has taken place during the past two weeks from fal-

low fields in the Red River Valley. Migration to new seeding sweet clover has been observed. Later emergence can be expected from sweet clover seed fields. Weevil damage has occurred along field margins.

Apple maggot fly emergence increased during the past several days.

### Potato Leafhoppers Found in Maryland

COLLEGE PARK, MD.—Surveys showed potato leafhoppers to average from two to 14 per sweep in third growth alfalfa fields in central Maryland and on the eastern shore. Due

to the dry weather grasshopper nymphs are more abundant than usual in hay fields in most sections.

Fall armyworms were noted in late field corn in Talbot and Queen Anne's counties. This insect called the "ragworm" by many farmers is an annual migrant from the south and prefers to work in the whorl. Damage from the corn earworm or "budworm" to late corn in the whorl stage has also been observed and is very similar to the injury caused by the fall armyworm.

European corn borer first generation pupation is nearly complete in all sections. Second generation egg masses are few and far between on corn in Talbot, Queen Anne's, Wicomico and St. Mary's counties. Those that were seen had "dried up." At present it looks as though the second brood infestation will be light. In most sections corn earworm has been heavier than usual in sweet corn ears and will no doubt increase in late corn.

Hornworm moths are increasing in a light trap at Salisbury. Spider mites are building up on beans in most sections. Watermelons and other vine crops on the shore have been hit hard by spider mites.

Green peach aphids continue to infest tobacco, although the warm weather is killing some.

On the eastern shore spider mites continue to be a problem in soybeans.

Bagworms on arbor vitae and mimosa webworm on mimosa and honeylocust have been heavy. Lace bugs are abundant on azaleas, rhododendron, oaks and sycamore.

Reports of chiggers infestations are increasing.—Theo. L. Bissell and W. C. Harding, Jr.

### Webworms No. 1 Pest In Missouri Alfalfa

COLUMBIA, MO.—In the central and northern sections of Missouri, fall webworms continue to cause heavy damage to late corn. Late sorghums may also be hit by this pest.

Both alfalfa and soybeans are being hit hard by webworms.

So far, the heavy damage expected from the second brood of European corn borer has failed to materialize. Over most of the state, there is still time for some damage, but egg counts—particularly in late corn—have not been as high as expected.

It now seems obvious that most of the state is going to get by this year without too much trouble from grasshoppers. In some areas—especially in the northwestern counties—there are enough hoppers to cause some ragging of corn around the edges of the fields. In the same areas, alfalfa is also taking some damage. But the big problem with hoppers will probably be fall seeded grasses and legumes.—Stirling Kyd and George W. Thomas.

### Variety of Insects in Georgia Cause Losses

ATHENS, GA.—Forty-nine fields in 15 northeast, northwest and north Georgia counties were examined for boll weevil and had a range of 8-89% punctured squares. The average infestation for all fields examined was 38% punctured squares.

Heavy infestations of the boll worm were reported from Newton County and moderate infestations have been noted in Elbert, Oconee, Walton and Coweta counties.

Aphids are causing moderate damage in Madison, Franklin, Hart, Oconee, Coweta and Polk counties. Heavy infestations have shown up in Elbert, Walton, Newton, Butts, Spalding, Carroll, Floyd, Gordon and Bartow counties.

Damage is being caused by the spotted alfalfa aphid, the three-cornered alfalfa hopper and spider mites.—W. C. Johnson.

### Corn Borer, Webworm Numbers Up in Iowa

AMES, IOWA—Light trap catches at the European corn borer laboratory at Ankeny, Iowa, have increased from 110 on July 29 to over 400 on the night of Aug. 1. Peak flight is not expected, however, until this week.

Pupation at Ankeny was 80% on Aug. 2. Out of a total of 100 forms observed, 37% were emerged pupae, 43% were pupae, and 20% were in the fifth instar borer stage of development. On Aug. 2, pupation dissection in Boone County showed 4% fourth instar borers, 42% fifth instar, 41% pupae and 13% emerged pupae.

Webworms have appeared in large numbers on alfalfa in Guthrie County. They are expected over a wide area because of heavy moth flight.

The corn leaf aphid on corn and sorghum is being reduced in southern Iowa by natural enemies and the weather. It is appearing more numerous in northern Iowa at the present time but will probably decline as parasites and predators become more active.

Grasshopper populations range as high as 20 per square yard in some southwest Iowa counties. The differential and red-legged hoppers predominate.

Chinch bugs are present in corn in very low numbers. Red spiders in untreated fruit plantings and ornamentals are approaching peak populations.—Earle S. Raun.

### Nebraska Milo Fields Infested with Aphids

LINCOLN, NEB.—Most of the milo fields in Nebraska are infested with corn leaf aphids.

The small-bluish-green aphids are difficult to kill as they are protected in the whorl and tightly rolled leaves.

Corn leaf aphids also appear on the tassel and upper leaves of corn. They are not economically important.—Robert E. Roselle.

### Boll Weevil Increases In Tennessee Fields

KNOXVILLE, TENN.—The boll weevil is showing some increase and some fields that have not had any noticeable infestations are getting a few weevils at this time. This indicates some local migration.

Boll weevil infestations still vary widely from field to field. The average for the infested fields this week was 27% and was 22% last week. Rains continue to favor weevil buildup.

Boll worms are causing some damage in most fields with weevil infested fields supporting the heavier populations. Large bolls are receiving some damage as the worms get larger.

Plant bugs are causing considerable increase in many fields with some injury to young squares. Rank cotton is supporting the heavier infestations. Aphids are still found heavy on single plants within a field.

The common stalk borer has been found in several plants along margins of the fields.—R. P. Mullett.

### Codling Moth Active In New Jersey Areas

NEW BRUNSWICK, N.J.—The codling moth is becoming more active in some central New Jersey orchards. A report of unspotted tentiform leaf miner (or other species) causing defoliation in a Cumberland County orchard has been made.

Brown rot resulting from hail damage is feared in the peach crop. In southern counties canker is serious.

Fusarium wilt is showing up in tomatoes and a small percentage of spotted wilt is showing in a number of fields of southern plants. Two-spotted mite injury is appearing on



AT NEW YORK CONFERENCE—Above are scenes from the recent New York Fertilizer Conference held at Cornell University. In the top photo Dr. Nyle C. Brady, second from left, head of the agronomy department at Cornell, explains some of his department's research projects to three industry representatives. From left to right are J. D. Romaine, American Potash Institute, Washington, D. C.; Dr. Brady; S. F. Thornton, F. S. Royster Guano Co., Norfolk, Va.; and J. C. Crissey, Cooperative G.L.F., Ithaca, N. Y. In the center photo E. C. Dunkle, center, Cornell agronomist, goes over the program for the conference with two other agronomists: W. H. Garman, National Plant Food Institute, Washington, D. C.; and George Serviss, Cooperative G.L.F., Ithaca, N. Y. Below, Prof. Walter Griffith, right, Cornell agronomist, shows the corn at the University's Aurora Research Farm. Left to right are Harold Beals, Cooperative G.L.F., Ithaca, N. Y.; Thomas R. Cox, American Cyanamid Co., New York; and Louis J. Dushek, Callanan Road Improvement Co., South Bethlehem, N. Y.

tomatoes and the hot, dry weather is favoring mites.

Mites are also causing death of sweet potato vines in some areas and several fall armyworms and corn earworms have been caught near Trenton. Borer egg masses, however, are still few and far between. Eggs of second generation corn borer are starting to appear.—Spencer H. Davis, Jr., Leland G. Merrill, Jr., and Robert E. Treece.

### Peach Scab Infests Indiana Orchards

VINCENNES, IND.—Peach scab is beginning to show up in a few orchards and a heavy infestation is present in one orchard.

Daily captures of the Oriental fruit moth in a heavily infested orchard were less than for the previous week. Total moths captured in five traps from July 22-28 was 148, as compared to 572 between July 15-21.

European red mite adults are still abundant enough in many apple orchards to cause injury before harvest. Green June beetle adults are clustering on ripe peaches in the peach orchards and causing their usual annoyance.

The insectary codling moth larvae that hatched on July 12 were leaving the apples to pupate on July 29. This means that third-brood larvae will likely begin entering the apples in orchards soon.—D. W. Hamilton.

### Indiana Insects Not Yet Reaching Peak Population

VINCENNES, IND.—Although the number of new entries of codling moth was more prevalent in unprayed orchards than in the preceding weeks, third-brood activity has just begun. Bait trap captures of adult moths is still too low for them to have reached their peak of egg laying. If the present low temperatures continue, third-brood activity will be light. At present, codling moth injury for the area is the lightest recorded since 1952.

Inquiries received at the laboratory indicate that red-banded leaf roller is still present in several orchards in large enough numbers to cause injury to the fruit. Orchards should be checked carefully at this time in order to assure control of this pest, especially on blocks of late maturing apples, throughout the fall.—D. W. Hamilton.

### Varied Pests Prominent in Massachusetts Areas

AMHERST, MASS.—The second brood of leafroller is active earlier than usual and there is a good chance that some third brood insects will show up on late varieties of apple trees.

Some apples continue to be plagued by scab, black rot and bitter rot and peach tree borers are a problem in some areas.

Aphids and both worms and loopers are building up on cabbage, cauliflower and broccoli. Aphids are increasing on vine crops.—C. J. Gilgut and E. H. Wheeler.

### Piedmont Area Hit by Tobacco Horn Worms

RALEIGH, N.C.—Tobacco horn worms are causing late damage in the Piedmont area. Tobacco flea beetles are inflicting moderate to severe damage in both flue cured and burley tobacco areas. Late tobacco is most severely damaged. Tobacco budworms are appearing and heavy flights of moths indicate possible damage in flue cured and burley tobacco. Screw worms appear to be spreading eastward from the original area of infestation. Boll weevils are still causing severe damage. Recommendations for material where applied properly giving satisfactory control. Mimosa webworm is doing severe damage to mimosa.—H. E. Scott (Western Union).

### Grasshoppers Continue Damage in Kansas

MANHATTAN, KANSAS—Grasshoppers continue to be a very serious problem through central and western Kansas. The extreme temperatures have driven them to shelter belts, corn, and sorghum fields as well as gardens and ornamental planting around homes. Severe damage to tree bark as well as leaves is found where the grasshoppers can find some shade. Corn silks are being destroyed throughout fields and some damage to sorghum leaves and emerging heads can be found.

Severe damage to corn less than 24 in. high from the fall armyworm and corn earworm is common in eastern Kansas.

Corn leaf aphids have decreased in north central Kansas counties due to extremely hot weather and beneficial insects.

Lodged stalks of corn because of a poor root system damaged by the

corn rootworm has been found in Marshall, Washington, and Shawnee counties.—David L. Matthew and Dell E. Gates.

### Completes Insect Recognition Course

LOGAN, UTAH—Utah's district insect recognition and control training conferences have now been completed, according to Dr. Carl Frischknecht, director, Utah Extension Service.

Economic insect survey conferences for county agricultural agents and district agricultural inspectors have been held in Cedar City, Richfield, Ogden, Provo, Heber City and Price.

Utah agriculture has benefited greatly in the past few years through an increased interest in insect recognition and control, the director said. This has been stimulated by state and federal cooperative insect control programs and training programs, initiated in 1954, he said.

### Fairfield Chemical Makes New Stainless Product

NEW YORK—Development of improved pyrene concentrates which provide a base for stainless insecticides, has been announced by the Fairfield Chemical Div. of Food Machinery and Chemical Corp.

According to John A. Rodda, manager of the division, the new production process provides not only the stainless feature but also maintains the full value of the pyrethrins and keeps the stability for which the product is known.

Fairfield Chemical has become the world's largest handler of pyrethrum. Its development of peperonyl butoxide, a synergist for pyrethrins, has been shared with other manufacturers domestically and throughout the world.

According to Mr. Rodda, this new development will likewise be made available to other manufacturers and will be offered to the trade at no increase in price.



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Martin E. Newell



Milton B. Kihlstrum



Wilfred E. Lingren



Donald G. Neth

## Miller Publishing Co. Elects Officers, Names New Directors at Annual Meeting

MINNEAPOLIS—New officers and directors were elected by The Miller Publishing Co., publisher of Croplife, at the annual meeting here July 24-26.

Martin E. Newell was promoted to chairman of the board of directors and Milton B. Kihlstrum was named president. Wilfred E. Lingren succeeds Mr. Kihlstrum as executive vice president. Paul L. Dittmore was named vice president.

New board members are Donald G. Neth, managing editor of Croplife, and George L. Gates, editor of Feedstuffs, a publication affiliated with Croplife. Mr. Neth succeeds Mr. Lingren as secretary.

Don E. Rogers was reelected vice president and Mr. Kihlstrum was reelected treasurer. Renamed assistant treasurer was J. G. Patridge.

Mr. Newell, who will continue as manager of the Kansas City branch operations, succeeds Carroll K.

Michener who retired last month as board chairman. The latter had been with the company for 40 years. Mr. Newell, who has been with the firm since 1928, has held a number of editorial and advertising positions with the company at Minneapolis, Chicago and Kansas City.

Mr. Kihlstrum was formerly managing editor of the company's publications and succeeds the late Harvey E. Yantis as president.

Mr. Lingren continues as advertising director of the company. Remaining as head of the New York City branch office is Mr. Dittmore. Mr.



P. L. Dittmore

Rogers is manager of the Chicago branch.

## Fertilizer Short Course Scheduled

ATHENS, GA.—Agronomists of the University of Georgia College of Agriculture Extension Service and Experiment Stations will join forces with the Georgia Plant Food Educational Society to bring fertilizer and lime salesmen the latest research findings on use of their products in Georgia. The fertilizer-lime short course will be held Aug. 27-29 at the University of Georgia Center for Continuing Education.

Ralph Johnson, extension agronomist, short course chairman, said that attendance will be by advance registration only and already is closed.

Topics for Tuesday, Aug. 27 will cover Georgia soils and their characteristics, soil testing, and how soils supply nutrients to plants.

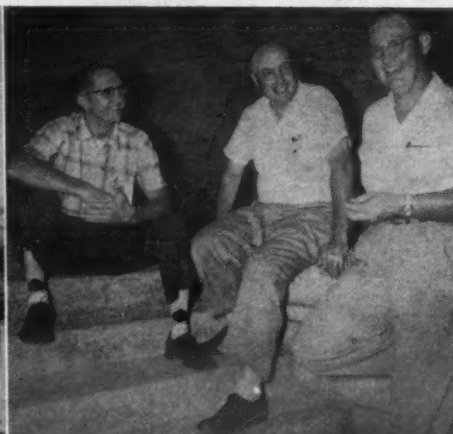
On Wednesday, speakers will discuss how plants manufacture food, movement of nutrients and manufactured foods in plants, influence of en-

vironment on plant growth, importance of water in crop production, movement and role of water in plants, and influence of soil reaction on plant nutrient availability.

Beginning Wednesday afternoon Aug. 28, lime, nitrogen, phosphorus, secondary and trace elements will be considered. These topics will be discussed: the importance of plant breeding to efficient fertilizer use, fertilizer and lime potential in Georgia, how fertilizer and lime fit together into Georgia's changing agriculture, more profits from efficient use of fertilizer and lime on major crops, fertilizing and liming for more efficient crop and livestock production.

Russell Coleman, executive vice president of research and education, National Plant Food Institute, will speak at the Wednesday night banquet, on "The Fertilizer Industry and Education—Partners in Progress."

The program will conclude on Thursday afternoon with a report by Ralph Johnson on what the extension service is doing to bring about greater fertilizer knowhow.



**GREAT PLAINS NH, CONFERENCE**—Representatives of the fertilizer industry and prominent soil scientists were present at the Great Plains Agricultural Ammonia conference held at Manhattan, Kansas, July 11-12. Here are some scenes at the event. Top row, left to right: Roy Burnam, Lubbock Machine & Supply Co., Lubbock, Texas; Dr. R. W. Scanlan, Phillips Petroleum Co., Bartlesville, Okla.; Prof. C. J. Chapman, University of Wisconsin, Madison; and Kaspar Peter, Phillips, Omaha, Neb. Second photo: Roland Groteluschen, Lincoln, Neb.; Glen W. Lowrey, Grand Island, Neb. and Carl Dahl, Hutchinson, Kansas, all with Consumers Cooperative Assn. Next photo shows part of the group on tour, inspecting various test plots, and the last shot, top row, shows two of the visiting speakers and the chairman of the meeting. They are: Dr. Donald D. Johnson, Colorado State University; Dr. Billy Tucker,

Oklahoma State University; and Dr. F. W. Smith, Kansas State College.

Bottom row: Harvey J. Stangel, Nitrogen Division, Allied Chemical Dye Corp., Omaha, Neb. and Dr. Donald D. Johnson. Next shot shows an applicator being inspected by Emory J. Alderman, Dempster Mill Manufacturing Co., Kansas City; Ole Sederberg, Dempster, Beatrice, Neb.; and Robert A. Krantz, Jr., Yaggy Plantation, Hutchinson, Kansas. Third photo: Maurice E. Peterson, Sinclair Chemicals, Inc., Blencoe, Iowa; Anton M. Horehals, Sinclair, Chicago; A. Wayne Peck, Phillips, Bartlesville, Okla.; and Frank Jordan, Agricultural Ammonia Institute, Memphis, Tenn. Last picture shows Otho Clark, Clark Mfg. Co., Atherton, Mo.; John Gardner, Missouri Farmer Assn., Columbia; and Wayne H. Ubben, Stanton Fertilizer Company, Ode, Nebraska.

## Industry Patents and Trademarks

2,799,569

**Ammonium Phosphate Fertilizers.** Patent issued July 16, 1957, to John Wordie and Davis A. Skinner, Fullerton, Cal., assignors to Union Oil Co. of California, Los Angeles. The process of preparing an aqueous ammonium phosphate product which comprises: (1) introducing into a reaction zone: (a) crude wet process phosphoric acid containing normally incident impurities which precipitate as gelatinous solids upon treating the acid with ammonia, (b) ammonia, (c) water, and (d) a recycled portion of the reaction product, the amount of ammonia being such that the reaction product which is subsequently withdrawn from the reaction zone has a pH value between about 6.3 and about 6.7 and the amount of water being such that the total  $P_2O_5$  concentration in the reaction zone is between about 20 and about 30 percent by weight; (2) maintaining a temperature between about  $140^\circ$  and about  $190^\circ$  F. within the reaction zone; (3) violently agitating the reaction mixture within the reaction zone; (4) upon completion of reaction and attainment of the aforesaid pH value withdrawing the reaction product from the reaction zone; and (5) returning between about 60 and about 80 percent of the reaction product to the reaction zone as said recycled product, said reaction product being in aqueous solution of ammonium phosphate containing said gelatinous solids suspended therein.

2,799,613

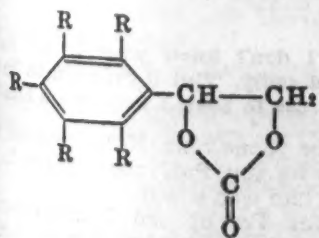
**Fungicides and Bactericides and Process of Applying.** Patent issued July 16, 1957, to Hans-Karl Blodorn, Darmstadt-Trautheim, Germany, assignor to E. Marck Aktiengesellschaft, Darmstadt, Germany. Process of treating infestation by a member of the group consisting of molds and bacteria which comprises subjecting the infestation to the action of di-normo-pentachloro-cyclohexane.

2,799,615

**Process of Preparing Fungicidal 8-Hydroxyquinoline Compositions.** Patent issued July 16, 1957, to Albrecht Heymons, Berlin-Nikolassee, and Willy Schnabel, Berlin-Schöneberg, Germany, assignors to Riedel-De Haen Aktiengesellschaft, Seeize, near Hannover, Germany. The process of preparing a fungicidal composition, comprising the step of mixing at substantially room temperature a first solution of copper oleate and nickel oleate in benzene with a second solution of 8-hydroxyquinoline in a mixture of benzene and oleic acid, whereby the components of said first and second solutions react to form said composition.

2,799,616

**Nematocide.** Patent issued July 16, 1957, to William K. Johnson, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo. The method of controlling nematodes which comprises exposing said nematodes to a toxic quantity of a nematocidal composition comprising in inert carrier and, as the essential effective ingredient, a cyclic carbonate of the structure.





Doing Business With

# Oscar & Pat



Nora McGillicuddy opened the door of the bedroom and called, "Oh, Pat dear, it's almost 10 o'clock. Don't you think it's time you get up? I'm surprised Oscar hasn't telephoned."

Pat McGillicuddy grunted, then slowly opened his eyes. "Let him phone," he mumbled. "He'd sleep late, too, if he had been out until 12:30 a.m. to a farmers' meeting."

"Not Oscar," laughed Nora, her black eyes merry. "He'd be there before seven, wouldn't he, even if he had to yawn all the time?"

"Begorra, you're right," grinned Pat, sitting up in bed and stretching his long arms. "Well, get the coffee

perking, and I'll be at breakfast in a couple of minutes."

"Good," Nora said. "I'll fry two eggs and some bacon, too."

Sipping his black coffee, Pat slowly dug folded pieces of paper from his trouser's pocket, and spread them out on the table. "Sure, I did pretty well last night, Nora. I never try to sell to those farmers, but after the meetin' we just sit around and talk farmin', begorra, and first thing you know I have orders for fertilizer, or sprayers or insecticide."

"Oscar will be happy to see those

orders." Nora placed the eggs and bacon on Pat's plate along with a piece of buttered toast.

"Oscar is never happy about anything, except discounts," Pat mumbled. And then suddenly Nora and he laughed again, loudly but understandingly.

"Speaking about Oscar," Pat frowned, sipping some more coffee, "I had a dream about him last night."

"Oh, really?" smiled Nora. "Was he out collecting again?"

"No, 'twas a funny dream, begorra. I was swimmin' in the old hole down near Bessent's Mill—where all the kids swim—but this time I was alone.

And I was tired. Suddenly I couldn't swim alone anymore. I started to sink. Then Oscar jumped in and took out a plug in the bottom of the pool and the water drained away. Sure, and Oscar hauled me out of the pool and sat me up and pounded me back and got the water out."

"Well," Nora said wide-eyed, "what a dream!"

"It sure was," Pat said, "and when I thanked Oscar he said, 'You should know better than to swim in a deep pool like that. Use a bathtub. Ach, it's safer.'"

Again Pat and Nora laughed uproariously. "Oscar even haunts me in my dreams now," Pat said. "Why would I dream a crazy dream like that?"

Nora looked thoughtful. "I don't know, but it does show something perhaps."

"What?"

"Oh, how you and Oscar operate in your business."

"Begorra, and what do you mean by that, girl?"

Nora smiled. "You are such an enthusiastic salesman and promoter that sometimes, sometimes you get into deep water."

"When you say that, smile, darling," Pat said mockingly. "It's true, but why rub it in? Can I help what I am?"

"I suppose not," she teased pulling at his chin quickly, then withdrawing. "And I might not like you if you were different. But in the dream you got into deep water, and thrifty Oscar plunged to the rescue and saved you. Isn't that true?"

"If you're talking about the business, he doesn't save me," Pat corrected. "It's me that is saving him, begorra. I go out and get the business that pays the expenses so he can sit and figure."

Once more Nora smiled understandingly. "Yes, there are two ways of looking at it, darling. I know it is very difficult to be in business with him, Pat, but can't you stand it until the children are a little older?"

Pat swallowed some more coffee. "I suppose so, Nora. The four girls have to go to college someday. And little Kathleen has to have her teeth straightened. That's about \$900 I didn't count on spending."

Nora leaned over and kissed him. "But we're happy, Pat, we're happy. I'm not sorry I married you."

Pat smiled quickly. "Now, then, that's the way to send a man off to work, begorra," he said patting her head. "But, tell me, Nora, why can't I have what Oscar has, at least some of it, as well as what I've got?"

"I don't know, dear," Nora replied softly. "Sure, and only the Almighty can answer that. You've got something Oscar hasn't got, and he's got something you haven't got. But together, it works out all right, doesn't it? You eat and he eats."

"Yes, but some men have both," Pat complained. "Lots of men don't need partners. They're good salesmen and cost accountants, too."

Nora nodded. "Yes, they are, but that's not the case with you and Oscar. Maybe the Almighty has a purpose for you two a workin' with each other. As Fayther Macaulay might say—God's wisdom through man."

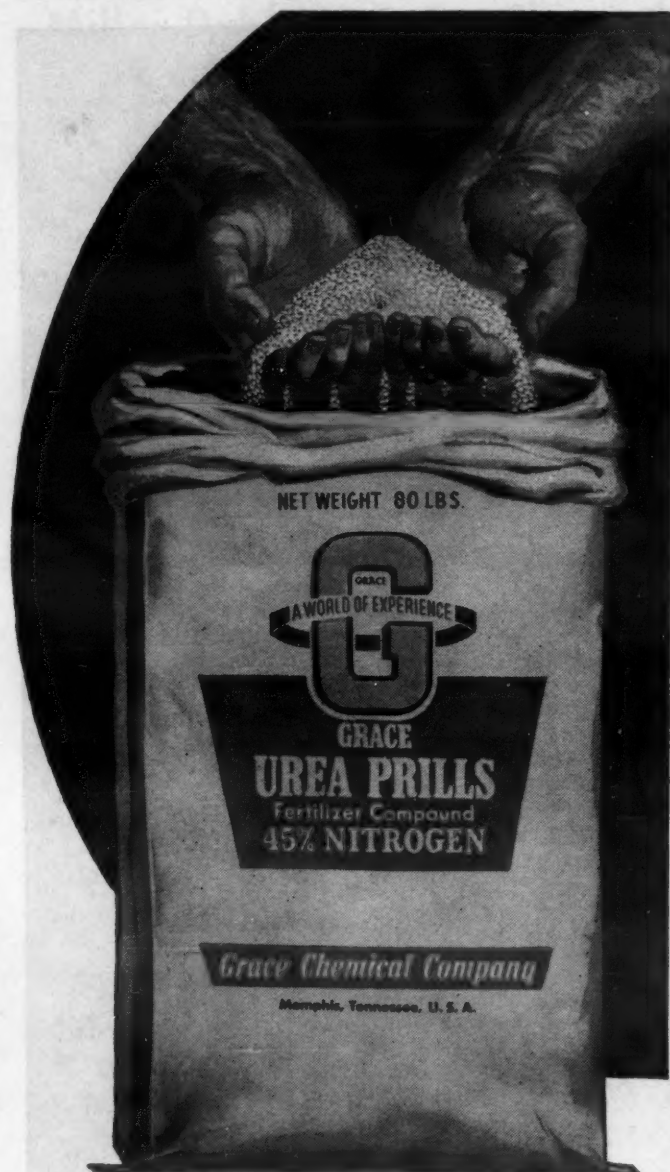
"I don't know what it is," Pat said sadly. "But if ever a man had a cross to bear, I have—with him."

The phone rang. Nora answered it. "It's for you, Pat," she said. Her look told him who it was.

"Yes, I'm up and I have eaten," Pat said coldly. "And I've got some orders." After a moment he hung up.

"Why, Pat," Nora reprimanded, "that was rude of you. Why did you hang up on Oscar?"

"Because when I told him I had lots of orders, he wanted to know if they were cash! I felt like actin' the devil he thinks I am—at least for the moment."



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**Grace  
Urea  
Prills**  
This Fall

**Its special properties help build  
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In the fall of the year, you'll find Grace Urea Prills offer you a real opportunity for extra profits.

That's because Grace Urea Prills is a superior nitrogen fertilizer ideal for fall application.

Your customers can use Grace Urea Prills profitably for:

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## SHOP TALK

### OVER THE COUNTER

By Emmet J. Hoffman  
CropLife Marketing Editor



Some dealers who rent fertilizer spreaders and other light equipment to customers find this practice a welcome source of extra income, as well as one which increases related sales. Other dealers who have experienced losses by not having equipment returned or getting back damaged equipment find the rental business a headache and without profit.

A Texas dealer with wide experience in the rental business says it is an excellent profit-maker for his firm.

The John Davis Feed Store, Big Spring, Texas, has doubled the sale of fertilizer for lawns and gardens by allowing the customer to use one of five small spreaders.

"We had to adopt some strict rules," says Jay Cunningham, co-owner of the store. "On a wall sign the customer notices that the deposit on each spreader is \$5, and then 50¢ per day for every day after the first one. That sign is just to keep everyone in line. Actually, we don't charge anything if the spreader is returned on time. Our purpose is to sell fertilizer, so the rules apply only to the careless or dishonest customer."

The store sells very little fertilizers for field use, since there is practically no irrigation in the area. Rainfall averages only about 17 in. a year, so fertilizers have not

been widely used. The store has built up a profitable business in lawn grass, fertilizers and insecticides for city and suburban dwellers, however.

"A few pounds of fertilizer to city customers can mean quite a lot," says Mr. Cunningham, "especially when they also buy grass and garden seed, maybe a garden hose and a few other items. The advantage of building a city trade is that the sales last all year long, most of it is on long profit items, and it's all cash business."

"Renting equipment can bring in a lot of extra sales, if handled in a business-like but tactful manner."

## FIELD NOTES

### 5-Point Program Revives "Tired" Soil of Washington County, Tenn.

By Raymond Rosson, County Agent,\*  
Washington County, Tennessee

During the winter of 1927-28 a group of Washington County, Tennessee, farmers and business men were invited to meet with the new county agent to discuss a future plan of work designed to fit into a program that was badly needed in the oldest county in Tennessee.

The county soil was badly worn from over-cropping, growing red top, timothy and feeding its livestock corn fodder and corn, a practice that had been carried on since the Civil War.

A five-point program was set up and it was hoped it could be accomplished in 25 years. The program was as follows:

1. Sweeten the soil by liming.
2. Apply all the phosphate obtainable.
3. Produce better pastures and legume hay.
4. Utilize pasture and hays with better bred livestock.
5. Organization in some form.

In 1928 the county received its first shipment of 35 cars of limestone—an entire train of agricultural lime. This was before the conception of the old AAA or the TVA. Needless to say, it worked. Farmers continued working on the first four of the five-point program until 1938, when the first organized community came into being. The community didn't know just where it was going and how it was going to get there.

\*The county agent referred to in this article is Mr. Rosson, the author.—EDITOR.

There was one thing the county agent thought he knew, and that was, "People are people's biggest problems," and he knew people had to be sold to want something together.

"Dollars and sense" can turn sedge fields into profit-making pastures, and the hill farmers of east Tennessee have been doing just that since 1928.

After liming some two tons per acre, the farmers applied heavy applications of phosphate, then potash and nitrogen. Pasture tours were organized and the fertilized fields were visited by thousands of farmers, county agents, agronomists and fertilizer people, from 75 counties in Tennessee, 41 states of the nation and from 45 foreign nations.

The county's goal is permanency in agriculture; an agriculture that is stable and secure for farm and farmer, consistent in prices that can satisfy indefinitely all the needs of food, fiber and shelter in keeping with U.S. standards. Everyone has a "stake" in a permanent agriculture, even the people on all the main streets.

The farmers look to the future and consider the land and its management, this time as never before, in terms of "grass." Around grass, farmers can organize general crop production so as to promote efficient practices that lead to permanency in agriculture.

Real honest-to-goodness thinking has been the order of the day, and out at the cross roads, where free thinking is at its best, farmers and extension workers have found out that a grassland economy can be

(Continued on page 13)

## Agricultural Dealers Briefed At 5-Day Louisiana Workshop

BATON ROUGE, LA.—Texas and Mississippi joined hands with Louisiana to stage the first annual agricultural dealers' workshop at Louisiana State University at Baton Rouge recently. Some 100 dealers enrolled in the workshop, with 45 of this group completing all courses and receiving certificates. This workshop was sponsored by the Louisiana Seedsmen's Assn. and the Louisiana State University agricultural extension service.

The five-day meeting was featured by talks by specialists and authorities in such subject matter fields as insecticides, pesticides, adapted and proved varieties of seed, livestock, pasturage, fertilizers, insects and crop production. Extra-curricular highlights were a visit to the state seed laboratory and seven tours, including such campus areas as greenhouses, field crop plots, dairy and beef cattle barns, the artificial insemination center, poultry farm and swine center.

Ragan Nelson, president of the Louisiana Seedsmen Assn., Alexandria, says the workshop met with an enthusiastic reception and that it will be made an annual event.

The insect control picture is becoming more complex because insecticides are changing each year, they are becoming more hazardous to use, insects are becoming more resistant to them and because the pattern of agriculture is changing, Dr. L. D. Newsom, entomologist and head of the Louisiana State University Entomology Department, said. Today there are more yellow striped army and southern army worms, the fall army worm is abundant on corn in

the southern half of the state and the first germination boll weevils are beginning to appear on older cotton. Dr. Newsom stated that the early leaf worm has been picked up earlier this year than ever before.

**Agricultural dealers must know the farmers' insect problems and they must be informed so as to give the right advice in counselling with farmers as to what are the most economical, efficient and safe insecticides to use.**

Fifteen years ago there were only 10 basic chemicals for use in insect control, Paul Betts, Cotton States Chemical Co., West Monroe, said. During that time farmers spent \$75 million on insecticides, in 1954 there were in excess of 100 chemicals to use for agricultural pesticide control. During that year farmers spent \$600 million on these chemicals. This is big business, he declared, and dealers should be so well informed concerning the effectiveness of these different chemicals so that the millions spent will be spent wisely.

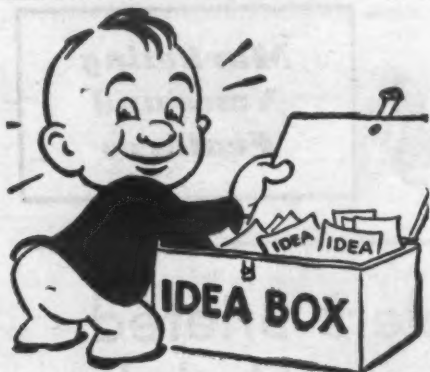
A good insect control program for the cotton farmer is a must, according to C. W. Kennedy, district agent, Louisiana State University agricultural extension service. Such a program may mean the difference between a good, profitable crop or a financial loss. Suppliers of insecticides, seeds and fertilizers probably are in closer daily contact with farmers than anyone else.

"You do not have to go it alone," Mr. Kennedy asserted. "You, as well as the farmers, have available to you

(Continued on page 15)



**DEALERS' WORKSHOP**—The committee members that planned the recent agricultural dealers' workshop at Louisiana State University are, top, left to right: J. H. Cade, Alexandria (La.) Seed Co.; Ragan Nelson, Louisiana Seed Co., Alexandria, La., president, Louisiana Seedsmen's Assn.; A. G. Killgore, Louisiana State University extension service; Joe Montelaro, Louisiana State University Extension Service; Sam Savage, Dixie Seeds, Inc., Gilliam, La.; lower left: Edward Vandersypen, at left, receives a certificate from Mr. Nelson, on completing workshop. Mr. Vandersypen is with the Alexandria Seed Co. Paul Betts, Cotton States Chemical Co., West Monroe, La., one of the speakers, is at the lower right.



## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6616—Automatic Control Unit

A new, completely automatic control unit for batch-type processing of neutral solution liquid fertilizers has been introduced by the Barnard & Leas Mfg. Co., Inc. The "B&L



Autobatch" is designed to meter phosphoric acid, aqua ammonia or other suitable nitrogen solutions, and water in pre-selected amounts and deliver them simultaneously to an auxiliary batch-mixing unit. It is completely self-contained and factory assembled,

company officials say. The unit was developed primarily for B&L batch-type neutral solution fertilizer processing plants. It may be used also to convert manually operated plants to automatic operation. Complete information on the equipment and neutral solution liquid fertilizer processing is available by checking No. 6616 on the coupon and mailing it to Croplife.

#### No. 6600—Spray Tolerances

United-Heckathorn is offering, free of charge, a wallet size folder containing a list of agricultural chemical spray tolerances giving the time limitation in days before harvest on various crops. The folder is in condensed form from information provided by the U.S. Department of Agriculture. To secure the folder check No. 6600 on the coupon and mail it to Croplife.

#### No. 5725—Yard Ramp

The Lite-Line Metal Industries of Copperloy Corp. has introduced a new, magnesium, yard ramp. This portable ramp permits freight car and truck loading where permanent dock facilities are not available, where existing facilities are overtaxed, or where special loading problems necessitate a portable dock. The



ramp makes use of magnesium combined with a carefully engineered structural design to make it light and easily portable. One man can move and position the ramp, which is 30 ft. long and is available in four models, from 6,000 to 16,000 lb. capacity. Secure complete details by checking No. 5725 on the coupon and mailing it to this publication.

#### No. 6617—Gopher Control

Cooke Laboratory Products has available literature on its product, known as Gopher Tabs. The literature states that University of California field demonstrations with field and forage crop producers, vegetable and flower growers and home gardeners show excellent kill results. The product contains .6% strychnine alkaloid. Check No. 6617 on the coupon to secure the literature.

### Also Available

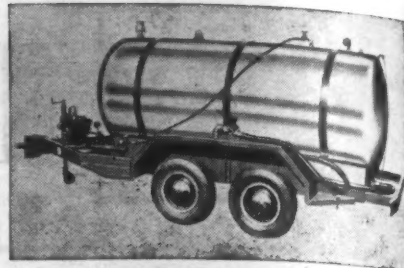
The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

#### No. 6599—Chemical

The Crown Zellerbach Corp., chemical products division, announces increased production of dimethyl sulfide, a basic and intermediate chemical, claimed to be more than 99% pure. Company spokesmen said the chemical is useful both for its physical properties and as an intermediate, but that it may find its major use as a raw material in chemical synthesis, for example, for making solvents, polymers and chemicals for agriculture. Reduced cost of the chemical is also announced. Secure a booklet, "Properties and Suggested Uses of Dimethyl Sulfide," by checking No. 6599 on the coupon and mailing it to Croplife.

#### No. 6615—"Nurse Tank" Transport

General Metals, Inc., is now in production on a new trailer-mounted "nurse tank" transport designed for hauling nitrogen solutions and liquid fertilizers from storage tanks to the farm and out to the field. It serves as a source of supply for trailer or tractor applicator units and is used in putting the solutions on the field. The unit may also be used for trans-



porting insecticides, weed killers, and other liquid products. The tank holds 1,000 gal. It is made of aluminum alloy to withstand 30 p.s.i. working pressure. To receive literature, prices and other information check No. 6615 on the coupon and mail it to Croplife.

#### No. 6601—Toxaphene Folder

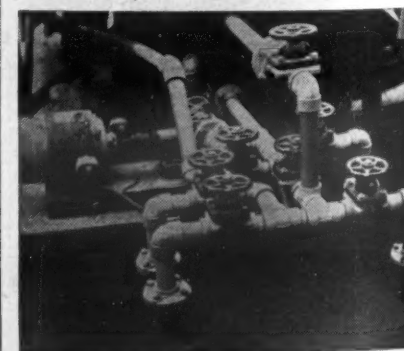
The use of toxaphene insecticides to control various insect pests which attack tomatoes is described in a new folder issued by the Hercules Powder Co. The leaflet discusses typical applications for the control of tomato hornworm, tomato russet mite, flea beetles, vegetable weevil, cutworms, tomato fruitworm, and blister beetles. To secure the folder check No. 6601 on the coupon and mail it to Croplife.

#### No. 6602—Fertilizer Bulletins

Fertilizer application is the subject of three new farm service bulletins offered to agents, dealers and farmers in the Middle Atlantic area by the I. P. Thomas Division of the Pennsalt Chemicals Corp. "Side Dressing Fertilizer," "Rotation Fertilization," and "Economics of Fertilizer Applications" give detailed recommendations on the various elements required during the growing season, types of commercial fertilizers, and methods of application to supply sufficient plant food for profitable yields. A reference table shows average composition of 39 common fertilizer materials. The bulletins are available by checking No. 6602 on the coupon and mailing it to Croplife.

#### No. 6607—Piping Systems

Details of polyvinyl chloride pipe, fittings, flanges and valves for use with liquid fertilizers are available in literature prepared by Tube Turns Plastics, Inc. The picture gives a close up view of the firm's piping that serves one of the liquid fertilizer mixing tanks owned by the Washington Cooperative Farmers Assn. Advantages claimed for the piping are: Re-



sists the attack of corrosives; is unaffected by weather conditions; requires no paint; and has long life. Secure details by checking No. 6607 on the coupon and mailing it to Croplife.

#### No. 6609—Ant Film

Insecticide formulators, distributors and dealers can now obtain copies of a new color-sound film on ant control, prepared recently by the University of Georgia extension service. The film is described as being "non-commercial, interesting, and authentic, and it affords a means for training personnel in modern ant control methods, or providing a factual background for ant insecticide sales promotions." The film covers the life cycle, habits, and control of ants. Copies are available in black and white as well as color and it has been

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| <input type="checkbox"/> No. 6588—Sulfur Brochure  | <input type="checkbox"/> No. 6611—Weed Control Guide  |
| <input type="checkbox"/> No. 6599—Chemical         | <input type="checkbox"/> No. 6612—Mixer               |
| <input type="checkbox"/> No. 6600—Spray Tolerances | <input type="checkbox"/> No. 6613—Gravity Application |
| <input type="checkbox"/> No. 6601—Toxaphene        | <input type="checkbox"/> No. 6614—Drying System       |
| <input type="checkbox"/> No. 6602—Bulletins        | <input type="checkbox"/> No. 6615—Nurse Tank          |
| <input type="checkbox"/> No. 6607—Piping Systems   | <input type="checkbox"/> No. 6616—Automatic Control   |
| <input type="checkbox"/> No. 6608—Bulletin         | <input type="checkbox"/> No. 6617—Gopher Control      |
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cleared for TV use. The running time is 13½ min. Copies of film may be obtained on a free, loan basis. For full details check No. 6609 on the coupon and mail it to Croplife.

### No. 6608—Technical Bulletin

A technical bulletin (No. 5) on urethane (ethyl carbamate) has been prepared by the organic chemicals division, Food Machinery & Chemical Corp. According to the company's announcement, there is a "growing interest in urethane" in the field of agricultural chemicals (including weed killers, fungicides and insecticides). Secure the bulletin by checking No. 6608 on the coupon and mailing it to Croplife.

### No. 6612—Turbine Type Mixer

The T. L. Smith Co. has introduced a mixer incorporating new design principles. The mixer is said to fit into spots too low for many types of mixers and "mixes so thoroughly that it actually homogenizes the materials." The mixer has a doughnut shaped mixing drum. The drive mechanism is located in the center of the drum. The drum shape is claimed to provide a "live mix" and eliminate dead centers in the mixing area. The mixer has application in the fertilizer and chemical industries, the manufacturer states, and it is possible to use a forced air exhaust so as to dissipate fumes and harmful gases. The blade action gives virtually instantaneous mixing for dry batches, according to the company. The mixer is made in three sizes: 17½-, 35-, and 53-cu. ft. dry batch. It can be used as a stationary or portable mixer. Secure details by checking No. 6612 on the coupon and mailing it to Croplife.



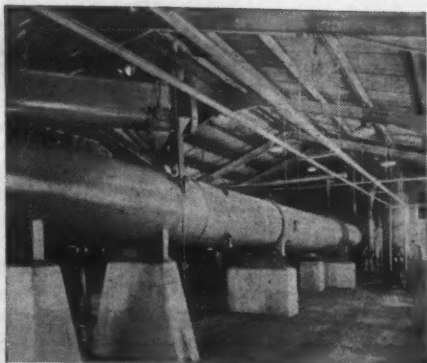
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### No. 6610—Laboratory Pellet Mill

The California Pellet Mill Co. has available a laboratory pellet mill which is claimed to have broadly diversified application in various chemical industries. Essentially, the equipment is designed to compress loose or fine particles into hard pellets. Advantages of the laboratory pellet mill, according to the company, are: Adds flexibility to plant operations by allowing the plant to make its own tests and experiments; better test control; no interruption in regular production runs because a regular pellet mill need not be used; and contamination due to experimental materials being mixed with regular production runs is avoided. Secure details by checking No. 6610 on the coupon and mailing it to Croplife.

### No. 6614—Waste Drying System

The Standard Steel Corp. has developed a new drying system for treatment of sewage sludge and industrial wastes. The basic unit in the system is the Standard-Hersey rotary dryer which can handle sludge of 75-80% moisture, reducing it to 6% moisture, according to company officials. The officials state: "A saleable product of uniform particle size, friable and non-dusty in character, is obtained. This product can be treated to a definite pH (by adding ferrous



sulphate to lower pH or lime to raise it) and can be improved as a fertilizer by easy addition of nitrogen and phosphorus. The process lends itself to simple addition of chemicals. The dryer serves as an excellent mixer and the sludge is a good carrier of additives because of its bulky nature—much surface area is available." In the picture the pug mill (upper left) feeds sewage sludge to the rotary dryer at the Broadway sewage disposal plant at Corpus Christi, Texas.

The screw conveyor going to the pug mill brings recycled dried product to mix with the wet feed which is delivered to the pug mill on a belt conveyor. Secure details on the system by checking No. 6614 on the coupon and mailing it to Croplife.

### No. 6611—Weed Control Guide

The soil building division, Cooperative GLF Exchange, Inc., has available its 1957 chemical weed control guide. A copy is available without charge. Check No. 6611 on the coupon and mail it to Croplife.

### No. 6613—Gravity Application

A new gravity application kit, designed to provide more accurate application of fumigants, has been developed by Fabricated Metals, Inc. The unit attaches to a tractor. Liquid flows by gravity from a supply tank through metering tubes that regulate

rate of flow to ground applicators. From two to six outlet headers may be used. The kit is described in a data sheet available free. To receive it check No. 6613 on the coupon and mail it to Croplife.

### No. 6588—Sulfur Brochure

The Stauffer Chemical Co. has published a comprehensive 48-page brochure on sulfur. The brochure contains a description of production and refining techniques, statistics on the world's production of sulfur, and notes on the various uses of the material. It also includes specifications for the several types of conventional and insoluble sulfurs used in industry and agriculture, and tabulations of the physical and chemical properties of sulfur in its different forms. A copy of the brochure, "Stauffer Sulfurs," is available free on request. Check No. 6588 on the coupon and mail it to Croplife.

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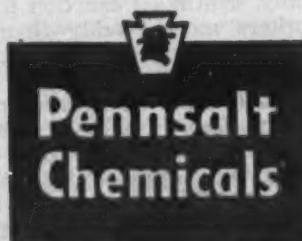
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# Utilizing Older Workers in Small Businesses

By John C. Rosen, Technical Associate

Richardson, Bellows, Henry, and Company, Inc., New Orleans, Louisiana

Should I hire workers over 50? Should I retain workers over 65? How can I use older workers? Such questions are being thoughtfully considered every day by owners and managers of small businesses. Some are making hasty decisions without fully reviewing the facts. Others do not realize that older workers provide one of the best sources of labor supply, and one of the finest assets a company can have.

During the past few years, industry has come to realize the advantages of using older workers. It is estimated that by 1960, 25% of all workers will be 50 years old and over. Even more impressive is the fact that today there are nearly three million people over 65 working in a wide range of occupations. Yet they represent only a small portion of all the older workers who could be utilized, but are not.

**SOME MANAGEMENT MISCONCEPTIONS:** Here are some of the reasons frequently given for not employing older workers: Greater absenteeism, greater accident rate, old-fashioned attitudes, less productivity. But before accepting them, examine some plain facts which dispute those arguments.

**Absenteeism:** In a survey of the records of almost 18,000 employees in over 100 companies, it was found that the absentee rate decreased consistently as age increased. Older workers, as a group, were absent fewer days per year than were their juniors.

**Accident Rate:** Continuing research also shows that as workers grow older, they tend to be more safety conscious. They show a lower injury rate. To be sure, however, when they do have accidents, the duration of disability is longer for older workers.

**Productivity:** Little scientific investigation has been made of the relationship between age and productivity. What has been done, however, indicates that output stays about the same in most people up through about age 55. After that, worker productivity begins gradually to fall off. More important than this is the finding that the kind of person is more important than how old he is. Actually, there are greater individual differences within the same age group than between different age groups. This means that you find many older workers who are able to produce more than the average for younger groups.

**Old-fashioned Attitudes:** A fourth common misconception of management is that chronological age is the main consideration in determining the attitudes of a worker. More important than chronological age is "functional age," or the way in which the worker regards the duties he is assigned to perform. One worker may be mentally (and even physically) "old" at 40, while another is still forward-looking, vigorous and "young" at 75.

**SOME LIMITATIONS OF OLDER WORKERS:** There are, of course, certain limitations characteristic of older people which must be kept in mind if workers are to be best utilized.

**Physical Strength:** This is a limiting factor. However, it is becoming less important to industry today as more power-operated equipment is used to lighten the tasks which once required great physical strength. Naturally, continued exertion tires older workers more readily than it does younger ones, even when the work is not particularly heavy.

**Speed:** Older workers are often relatively slow. It has been found that they cannot keep up well in tasks involving high-speed, mass production. Likewise, it is recognized that the older workers do not perform so well

under high pressure as they do in situations involving less tension.

**Memory and Learning Ability:** It is a fact that an individual's memory and quickness to learn can be affected by age. Older workers therefore may be somewhat more difficult to train than are their juniors.

**ASSETS OF OLDER WORKERS:** Look now at some of the many reasons which employers have found for utilizing older workers.

**Less Turnover:** From a survey made by the U.S. Chamber of Commerce and the National Association of Manufacturers, it was found that there is less labor turnover among older employees than among younger ones. Once having obtained jobs, older workers are more inclined to stay, and are more loyal employees. Attitude surveys have shown that those in the upper age ranges are the most satisfied with their jobs. In addition, they tend to be less demanding of their employers and more appreciative of what is done for them.

**Less Absenteeism:** Contrary to popular belief, older employees are absent less than younger workers. The Bureau of Labor Statistics reports that average workers under 20 are absent almost 6 days out of every 100, while workers over 45 years of age are absent only a little more than 3 days out of every 100.

**Greater Stability:** Older workers have an advantage of greater experience both in the performance of their jobs and in adapting themselves to the industrial climate. That broader knowledge tends to give them greater stability in handling assignments. Moreover, older people retain many complex mental abilities such as critical judgment, insight, and recognition of an action's potential effects. These abilities generally do not deteriorate, and in many instances, improve with age and experience.

**Better Quality and Accuracy:** What an older worker loses in speed, he gains in being more painstaking and accurate. Patience and mature judgment can be of real value when quality rather than quantity is important. Thus, in work like quality control and inspection, older people can be superior to others.

**Greater Safety:** Older workers are typically more careful and take fewer risks than others. This fact has been substantiated many times by studies of comparative accident rates. Company records show that workers over 45 have less than the average number of disabling injuries. In nondisabling injuries, the highest frequency rate is in the age group 25-29, and the lowest in 70-74 years of age.

**Less Supervision:** Once they know their duties and responsibilities, older employees often need less supervision than others. By and large, they work best when working alone or in small groups. This is advantageous in

many small businesses where supervisors are extremely busy and cannot give continual close supervision to anybody.

**General Adjustment:** There is a growing belief that as one matures he becomes better adjusted to his job. Some industrial physicians suggest that older persons as a rule possess greater emotional balance, and have achieved a more realistic acceptance of the things they can and can't do than is usually the case with young people. World War II had an awakening effect upon many business owners and managers who had previously had reservations about the usefulness of the older worker. During that national emergency—when young men had to leave their jobs to serve in the armed forces—older workers stepped into their places and helped produce the necessary supplies and equipment. The end of the war found ¼ of a million workers, eligible to retire, but still holding down jobs and serving their companies in an admirable manner.

**HIRING AND PLACING THE OLDER WORKER:** Management has come a long way in the last 15 years in realizing the usefulness of older workers. Unfortunately, however, older workers are still more commonly singled out for layoffs than are the young people. They also have more difficulty finding new jobs once they are unemployed. Nevertheless, older workers stand ready to fill the need when small companies are faced with local shortages of manpower, are experiencing high employee turnover, or are expanding their facilities.

Once a company establishes a policy of employing workers regardless of age, it has taken an important step in improving its reputation in the community. When it becomes known that the company has no hiring restrictions based solely upon age, members of the community will look upon it more favorably, because they know that, by being fair and impartial, it is helping with an employment situation of concern to all.

**Recruiting:** One of the important aspects of hiring older workers is recruiting. Here are two sources which may be helpful.

(1) **Local and State Employment Services:** The employment director and his assistants can be your good friends. Their job is to help you find workers who will give the service you want, and they will try to send you only workers who they feel will do a capable job. You can help, by giving the Service an accurate description of the jobs to be filled, including the duties and responsibilities. Explain, too, something about your general policy in regard to hiring and placing employees. The Employment Service usually has a complete record of unemployed older workers who are willing and able to work. By matching an older worker's

qualifications with your needs, it can help you to find the right kind of employees.

(2) **Large Industries:** In many ways, small concerns are better off than are large ones. For one thing, many large industries must emphasize "opportunity for advancement." Hence they are often forced to retire valuable employees at a certain age in order to allow others to progress. This means that experienced men and women find themselves out of work, when they are still highly capable. Managers of small companies can profit by hiring these workers and taking advantage of their skills and their mature judgment. In many instances, the personnel director of a large corporation is happy to refer to the manager of a small plant the names of competent employees who are about to retire. In this way, the large company finds a procedure by which its retired employees may continue working, while at the same time small plants can gain valuable workers.

**Selection:** Health and competence are the only valid bases for deciding whether or not to hire an older worker. Of course, you must take care in finding out whether a prospective worker is qualified to perform the duties of the job you have in mind. A few basic selection procedures may help in answering the question: "Should we hire this applicant?"

(1) **Application Form:** A well-constructed application form will provide information on the applicant's past employment history, his personal obligations, any special abilities, and other related items.

(2) **Reference Check:** A follow up of references given by a prospect may help to determine what strong points and limitations he has. Most employers will usually be willing to answer a reasonable number of questions concerning a former worker.

(3) **Physical Examination:** A thorough medical checkup by the company physician is essential. This should include not only a physical examination, but also a review of the individual's health history to learn if he has had illnesses which might recur or affect his work, and if he has had accidents while on the job.

(4) **Psychological Tests:** Psychological tests can be helpful in areas that are difficult to appraise in an interview or through an application blank. Such items as dexterity, hand and eye coordination, the capacity to get along with others, and the ability to perform special tasks may be investigated by means of inexpensive performance, aptitude, interest, and personality tests.

**ADJUSTING TO THE JOB:** Once you have hired older workers who are suited to the needs of your plant, the next step is to orient them to their assignments. A few simple procedures will help these people adjust to their new surroundings and be accepted more readily by your present employees.

**Consult Your Supervisors:** Managers have found that at the start supervisors often tend to be against employing and utilizing older workers. Why? Because many supervisors have the erroneous belief that older workers will take up more of their time and are more difficult to handle. Frequently they fail to realize that older workers actually need less supervision on the job than others do. One way of overcoming your supervisors' possible opposition is to make them a part of the program. They should not only know you intend to hire older workers and your reasons why, but should also have a hand in deciding what qualifications are most important for the job, and where older people may be best utilized. Supervisors should also be given the opportunity to meet applicants prior to hiring and to give you an opinion on their merits. Allowing the supervisors to take part in the decisions will generally bring about a more favorable attitude on their part.

**The "Buddy" System:** Every worker, whether young or old, likes to feel

## SUMMARY

Older workers can be a bigger asset than many small business owners realize. Millions of these workers are holding down jobs today. More millions are available but are not being effectively used. Behind this fact are various management misconceptions about older people: for example, that there is greater absenteeism among them, that they have greater accident rates, that they are less productive, and that they retain old-fashioned attitudes. Recent studies, however, dispute these generalizations.

Older workers are often found to be better than the youngsters. As a class, they are absent less, have fewer accidents, produce at comparable levels at least until the late fifties, and frequently retain youthful, forward-looking attitudes past the seventies.

There is no argument with the claim that older people have certain limitations. Physical strength decreases with age, so does speed. But many essential jobs demand neither. Assignments like quality control and inspection are often handled better by older workers. Employment services and sometimes large companies can help in finding capable older people. Careful selection and placement will make adjustments easier for them and for employees already in the company. Specific suggestions are given in the accompanying article, which is reproduced from a bulletin of the Small Business Administration, Washington.

is a part of the group. One way of promoting this feeling is to appoint a person respected by others as a "buddy" for the newly hired older worker. The buddy will be responsible for showing the new employee around, introducing him to others, taking him to lunch, and in general making him feel at home. In this way, the older person will be more at ease, and the others will accept him more readily as a part of their group.

**Provide Good Communications:** Still another way of helping older workers to adjust is through use of your communications system. A brief description of their backgrounds and interests can be placed on the bulletin board or in a newsletter. This will help others get to know them more easily, and will help to establish a more friendly working atmosphere.

**Keep Assignments Adjustable:** What happens when a worker you already have begins to slow down and cannot keep up the pace in his job? Should you ignore it and make the most of a bad situation? Should you fire him? Or should you adjust his job duties? The worker is usually the first to realize that he can no longer keep up the pace. While he wants to be "his old self" he finds that he is no longer able to do so. You may not realize that he would prefer to accept a less demanding job, even at lower pay, than to continue substandard performance. Yet this is often the case. Certainly he would prefer a reduction in responsibilities and salary than to be cut off completely.

The problem is usually best solved by a straightforward approach. If you tactfully suggest to a worker that he is not doing so well as he did previously, and that he might be better off with some adjustment, you may be able to help a valuable and loyal employee. You may also help the overall productivity of your plant. An adjustment can be made in various ways. For example:

(1) **Reassignment:** Older people may be transferred to a job which better suits their current capabilities. In such cases, they usually receive the pay of the new job to which they are reassigned.

(2) **Reduction of Job Duties:** In some instances, the problem can be solved simply by reducing some of the duties and responsibilities of the job which the worker is already holding. You may not need to make a change of jobs at all.

(3) **Part-time Work:** Some companies find that a flexible time schedule works well. In these concerns, the older individuals maintain their same jobs, but work fewer hours and accept a smaller take-home pay.

(4) **Reserve-Labor Pool:** Still another approach is to assign older workers to a reserve-labor pool. In this situation, they are shifted around to meet special needs such as rush periods or to fill in for regulars who are ill or on vacation.

**RETIREMENT, PENSION, AND INSURANCE:** Some managers, although they want to use a greater number of older workers, feel that a definite policy regarding them is difficult to administer. "How," they ask, "can you arrange to continue employing capable older workers, and still retire those who are not physically able to keep up?" One solution hinges on setting a specific time for the retirement of all workers. After a formal break is made, the company may re-employ selected workers as new, temporary employees. This temporary status has an advantage in that the re-employed older workers do not continue to receive seniority rights. Such a retirement plan allows the company both to retain its experienced, capable employees, and to reduce the cost of its pension plan. (Most companies do not provide a pension for retired workers as long as they are still on the active payroll.)

Workers between the ages of 50 and 65 sometimes experience difficulty in finding jobs because of pension plans. Some managers do not

want to hire older workers because they have less service to give to the company prior to receiving their pension. One way of dealing with this problem fairly is to give older workers whatever percentage of a full retirement pension they have earned. For instance, if a pension plan is set up so that a worker with 20 years' service can retire at 65 on full pension, then one who has been with the company for 10 years gets 10/20th or half the full pension. Sometimes managers also argue that older workers increase the costs of their insurance. Actually, however, insurance companies do not consider age, in and of itself, a factor in establishing insurance rates.

In many cases, the employment of older workers can actually save management thousands of dollars. Present laws allow the individual to earn only \$100 a month and still obtain Social Security benefits.

## 5-POINT PROGRAM

(Continued from page 9)

practiced on small farms just as well as on larger units. They know that grassland is cattle land and they know too that farmers receive more of the consumer's dollar when they sell milk, pork, eggs and most of the time, beef.

The county's farmers have realized that grass is a crop to be harvested, just as other crops, and they wanted to know, "What do we need to do to produce the best grass and at the same time build fertility, control erosion and retire debts?"

Farmers wanted and needed a "cushion" between themselves and the land, and they have found "livestock" to be that cushion. Of the home-grown feeds, pasture contributes the greatest amount of nutrients with the least amount of cost. Tennessee county farmers have tried to develop mixtures and combinations of grasses and legumes that will produce the greatest amount of pastureage at a uniform rate through the longest possible grazing season.

A permanent pasture is the key-stone around which the pasture program should revolve. It must be fenced and should be provided with shade and water. If properly started and maintained the permanent pasture should supply adequate grazing in most of the Southland from March 1 through November. County farmers are urged to seed something like 20 to 25 lb. orchard grass, four to 10 lb. alfalfa and 2 lb. Ladino clover per acre.

The fertilizer application should be about 500 to 1,000 lb. of a 3-9-18 or the same amount of a 5-10-20 at seeding time and 300 to 500 lb. per acre of the same mixture applied annually.

The grassland economy of Washington County looks mighty good, and is spreading to other counties and to other areas in the Southeast. The 50-acre farms could not have nice painted homes, electric stoves, deep freezers, running water, washing machines, automobiles, trucks, tractors, basements full of good food, with flowers and shrubbery along with green yards and fields, where erosion has just been stopped, had it not been for this grass (well fertilized) and good cattle to consume it. The business men on all main streets know what it has done, and there is a reason. Yes, it is still time to "go to grass" or "grow to grass."

## RINGING THE CASH REGISTER

### DOUBLE DUTY

Some dealers get double duty from the backs of their store envelopes. They use this space to print a picture of their store with the name prominently shown, or they reproduce the store slogan or their brand name. One dealer has one of his billboards reproduced in full color on the back of his envelopes. Using the back of envelopes for advertising produces additional publicity for little extra cost.

## 'Service Station-Type' of Farm Supply Store Operated by Mississippi Dealer

R. A. Land, president of the Feed & Supply Co., Inc., Meridian, Miss., likes to think of his farm supply store as a service station for farmers. By that he means that he wants farmers to come there to talk over their fertilizer, insecticide and seed problems. And, this genial dealer is never too busy to talk to farmers, even at length, about their problems, for he knows that a satisfied customer is one of the best assets a business can have.

And farmers know that Mr. Land is willing to give them this service, for such attitudes cannot be hidden. They show in a dealer's demeanor and everything that he does, as well as in his tone of voice.

Mr. Land has stepped up his fertilizer volume in recent years, despite a bad discount situation, due to his willingness to talk fertilizer needs with small and large farmers. He takes care in recommending the analyses fertilizer which various farmers need, and will help them get their soil samples ready to send to the state laboratory for testing.

In fact, it is not unusual to find four or five farmers standing around in the display room talking with Mr. Land about crop conditions and fertilization methods. This "give" and "take" of the discussion is what farmers like, and they absorb much education in fertilization via this method, states Mr. Land.

In this area corn calls for 10-20-10, as well as 5-10-10, he says, while cotton growers use 6-8-8 and also 13-13-13. Farmers who raise oats use 13-13-13 for this crop and also for hay and grazing crops. More and more farmers are becoming interested in fall fertilization, Mr. Land says, and he thinks this trend will continue in his area.

This dealer also handles an irrigation system which is selling very well to numerous farmers. Many are learning that good seed, proper fertilizer and irrigation go together to produce bumper crops. Mr. Land thinks that irrigation systems will continue to be a good sales item for several years to come.

Another reason why farmers like to come to this store is that Mr.



**MAKING A SALE**—R. A. Land, head of the Feed & Supply Co., Inc., Meridian, Miss., is shown here selling a cattle spraying compound to a farmer. Mr. Land believes in helping farmers with their soil fertility problems and assists them prepare soil samples for state laboratory testing so that the proper analysis fertilizer can be used.

Land carries his vaccines in a refrigerator and his wide stock satisfies just about any farmer who has need for them for his herds. Along with these vaccines is a good volume of business for poultry and livestock sanitation products, especially fly sprays during the hot season.

"We sell a lot of cotton dusts and other insecticides," states Mr. Land, "and we carry a sizable stock of hand sprayers for them. Our growing season down here is long and so insecticides have a long selling season, especially if you push the line with displays and ads. We like to get an early start on insecticides and have them out on display about Feb. 1 every year."

Mr. Land reports that he does some newspaper and radio advertising, as well as some direct mail. Fertilizer and insecticides get feature billing seasonally in much of this advertising. He feels that these lines have many new products and need additional advertising to call the merits of the products to the attention of farmers.

## Fertilizer Tonnages in Alabama Decreasing

MONTGOMERY, ALA.—Consumption of mixed fertilizers and fertilizer materials in Alabama amounted to 982,209 tons for the period July 1, 1956 through June 30, 1957, according to the State Department of Agriculture. This represents a decline of 5% from the preceding year when sales totaled 1,034,375 tons.

Changes in farmer preferences for grades offered in the state were manifested most in 4-10-7, which showed a drop of nearly 100,000 tons, and in 4-12-12 which recorded a gain of almost 70,000 tons. Sales of 6-8-8, 8-8-8, and 0-14-14 also showed substantial increases.

In plant food content, mixed fertilizers reached a new high for Alabama with an average of 24.4% being recorded. This compares with 22.7% for the 1955-56 season.

## Witchweed Threatens Corn in Carolinas

COLUMBIA, S.C.—Areas in nine counties of the Carolinas will be put under federal quarantine this month because of the presence of witchweed, South Carolina agricultural leaders have been informed.

In South Carolina parts of Dillon, Horry, Marion and Marlboro counties will be affected; in North Carolina, portions of Bladen, Columbus, Cumberland, Robeson, and Scotland counties will be quarantined.

U.S. Department of Agriculture officials termed the Carolinas situation potentially "very serious" as a threat to the nation's corn crop. Up to July 1, agents found approximately 12,000 infested acres on 157 farms in the counties named.

## May Inorganic Output Higher Than in April

WASHINGTON — May production of synthetic anhydrous ammonia totaled 334,204 short tons, a 4% gain over 321,529 short tons in April, the U.S. Department of Commerce has reported. Output of ammonium nitrate, original solution (100%  $\text{NH}_4\text{NO}_3$ ) in May amounted to 229,381 short tons, a gain of 2% over production of 224,750 short tons in April.

Production of phosphoric and nitric acid also was up. Output of phosphoric (100%  $\text{H}_3\text{PO}_4$ ) was 383,249 short tons in May, 8% over 356,352 short tons in April, while May production of nitric (100%  $\text{HNO}_3$ ) was 253,287 short tons, 3% higher than 245,241 short tons in April.



## FARM SERVICE DATA

### Extension Station Reports

Acreage of vegetable land in Florida will increase about 8,000 acres a year in the next decade to meet the increasing demand by northern markets, according to Dr. F. S. Jamison of the Florida agricultural experiment stations.

He forecasts that Florida will continue to supply a large share of the fresh vegetables shipped in fall, winter and spring to the North and East. At the present rate of growth, vegetable farms will encompass 523,000 acres rather than the present 443,000.

"Vegetable production occupies a unique and peculiar place in the agri-

cultural economy of Florida," Dr. Jamison declares. The state ranks second to California in this specialized farming. In California fresh vegetables for market represent about 12% of the state's agricultural income, but in Florida, the value of vegetables represents about 30% of total farm income.

Dr. Jamison warns that if they are to meet competition from processed vegetables, growers of fresh vegetables must continue to improve the quality of produce and to maintain that quality until the produce reaches the consumer.

The vegetable industry of Florida is losing ground near cities in areas

which are experiencing tremendous building booms. Residential building has encroached upon what formerly was valuable crop land, particularly in Dade and Broward counties. However, growers are taking land away from cities.

Dr. Jamison points out "the inherent ability of the vegetable industry to adjust to changing conditions." Many growers have found it necessary to switch from one crop to another, or adjust their practices of growing their old standby crops in order to compete.

The risk of low prices has often jeopardized the welfare of Florida growers, the horticulturist says. Attempts to alleviate the often violent price fluctuations of vegetables have all been thwarted.

"Mineralized salt" has been recommended as a fertilizer for South Carolina fish ponds by Dr. H. P. Cooper of Clemson College.

Bob Bailey, Richland County agent, sought advice from Dr. Cooper when

fish were not growing as they should in many fish ponds.

"It is interesting to note," Mr. Bailey added, "that where pond owners use sodium nitrate in their fertilizer program, the production of fish has been satisfactory."

Many tomato growers in southeastern Arkansas could increase the yields by applying agricultural limestone, according to the University of Arkansas. Tests conducted in Bradley County during 1955 and 1956 have shown that substantial yield increases can be obtained by liming soils in which the pH (a measure of soil acidity) is below 5.5. A check of samples tested by the agricultural experiment station's soil testing and research laboratory indicates that about half of the soils in the area being used for tomatoes are more acid than pH 5.5.

The use of nitrogen fertilizer as side-dressing on corn and tobacco is recommended, especially where sufficient amounts are used at planting time. Corn should be side-dressed with nitrogen fertilizer by the time the corn is knee high, according to Dr. William D. Bishop, University of Tennessee extension agronomist. The use of 30 to 60 lb. of actual nitrogen can be expected to increase corn yields from 15 to 25 bu. per acre, said.

Every year the same question arises as to the benefit gained in burning pastures, woodlands, brush lands and edges of cotton fields in an effort to control hibernating insect pests.

Dr. Freeman Fuller, Texas A&M College extension entomologist, says farmers can expect no control of boll worm, leaf worm, thrips and lice by this practice. The No. 1 cotton insect, the boll weevil, spends the winter in such quarters that he can't be controlled by burning.

Dr. Fuller does encourage use of proper cultural practices in destroying crop residues—and he says the boll weevil is at the farmer's mercy when he is found in the cotton field. Control there is practiced by using sprays and other insecticides.

Much of the loss of Georgia grain crops to disease this year might have been prevented by the use of treated certified seed of adapted varieties.

E. C. Westbrook, Georgia Crop Improvement Assn. official, urges farmers to plan ahead for next planting season and to "remember that certified seed, properly treated, will give the most profitable returns."

According to Mr. Westbrook, many Georgia seed dealers have the equipment to treat oat seeds but do not use it because farmers do not demand treated seed. He said that tests by experiment stations indicate that properly treated seed has given as much as one-third more grain than non-certified seed that has not been treated.

The yellow sugarcane aphid can be controlled by spraying or dusting with parathion at the rate of 3 lb. to 5 lb. per acre, says Dr. L. C. Kuitert of the Florida Agricultural Experiment Station.

The aphids have been reported as a serious threat to the pangloss grass pastures in Palm Beach County by R. K. Price, assistant county agent.

Research at the Everglades Experiment Station shows that the protein content of grass is cut in half by heavy infestations of the aphids which means that a cow must eat twice as much forage to get her quotient of nutrients.



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Rose Leaf Beetle  
Potato Leafhopper

Cotton Fleahopper  
Alfalfa Caterpillar  
Cowpea Curculio  
Corn Rootworm  
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Stink Bug  
Yellow-Striped Armyworm  
Blow-Fly  
White-Fringed Beetle  
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## AGRICULTURAL DEALERS BRIEFED

(Continued from page 9)

rough the county agents the results of years of research provided by the state university and the experiment station, through the extension service and other agricultural agencies. This, therefore, furnishes the information you need to advise the farm people wisely."

Kirby Cockerham, entomologist, Louisiana agricultural extension service, called the dealers' attention to the fact that the university has issued a reference book containing recommendations for use of insecticides. These books are available, he says, in all.

Dr. Julian Miller, the head of horticultural research at Louisiana State University, told of the work being done at the university in development of improved vegetable varieties. Dr. Miller exhibited specimens of the new Soda Irish potato, which he said is produced 300 bu. to the acre as compared to 200 bu. produced by the Triumph variety grown under the same conditions. Other vegetable varieties released, he said, include Velvet and Louisiana Market; Acadian and Goldrush sweet potatoes; and Klonmore, Marion Bell, and L-188 strawberries.

W. E. Monroe, agronomist with the Louisiana State University agricultural extension service, told the agricultural dealers that with all major crops under acreage allotments, the best way that a farmer can expand his farm operations is by increased livestock production. Here in Louisiana, Mr. Monroe said, there is a vast acreage of uncultivated land that is better than a great portion of the land in adjoining states and could be converted into pastures.

It is the responsibility of agricultural dealers, he said, to find out what their customers need, sell only recommended crop varieties that have been tested and proved, and emphasize the importance of good seedbed preparation and weed control and, in the case of pastures, the dangers of over-grazing.

Fertilizer needed for the production of cotton, corn and small grains in Louisiana was discussed by Dr. W. Peevy, agronomist, Louisiana agricultural experiment station and extension service. Dr. Peevy pointed out the major differences in soils in the state as related to their fertility status. He emphasized the need for farmers to have their soils tested in order to determine fertilizer and lime needs for crop production.

He enlisted the service of the dealers in encouraging farmers to send their soil samples to Louisiana State University where testing is done without charge.

The latest experiment station recommendations for the application of lime and fertilizer for the production of good yields of cotton, corn and small grains were outlined by Dr. Peevy.

With more than 1,000,000 new homes being built each year and the potential customers increasing, it becomes necessary for agricultural dealers to serve these greater numbers with greater efficiency, declared E. Jones, California Spray Chemical Corp., Richmond, Cal. One of the answers to this problem, suggested Mr. Jones, is the establishment of what might be termed garden supermarkets where customers may purchase all supplies and equipment. This trend toward garden centers is spreading, Mr. Jones declared, and Louisiana dealers were urged to consider such a service to people in the state.

Small grain for the state of Louisiana is a major factor in the economic stability, pointed out M. D. Lamberth, Pedigreed Seed Co., Memphis, Tenn. The acreage control program, which has limited the acreage of some of the generally accepted mon-

ey crops, has made it necessary for the farmers to take another look at these crops that have always been secondary in income production. Although oats and wheat are among this class, they should certainly be studied closely, because they afford the possibility of not only having a small grain crop early in the season, followed by a second crop on the same acreage, such as beans or hay crop.

It is a general practice in Louisiana for oats to produce 60 to 100 bu. to the acre and wheat from 25 to 45 bu. per acre. In studying the economics of producing this as a first crop, and then a bean crop of 25 bu. to the acre, or a hay crop of satisfactory production, it can be seen that these acres pay their way and will produce a satisfactory income over and above taxes, interest, production costs, etc. Oats and wheat of course are needed

for grazing, and with some of the new varieties that are being introduced it is Mr. Lamberth's belief that better varieties will be developed for this job of feeding Louisiana's livestock, and without these two crops it would be a difficult task, he emphasized.

### Nematodes Topic for Florida Discussion

ORLANDO, FLA.—Top agricultural scientists will meet in Orlando, Fla., Aug. 21-22 to lead a "workshop meeting" on the damage caused in Florida by nematodes—eel-like microscopic pests that cost the state's farmers, citrus growers and nurserymen upwards of 10% of their annual production.

The purpose of the meeting is to give Florida's growers and farmers the latest scientific findings on the damage caused by nematodes and on methods of controlling the pests. Reports from the 24-member workshop

staff will cover citrus, vegetables, nursery stock and tobacco.

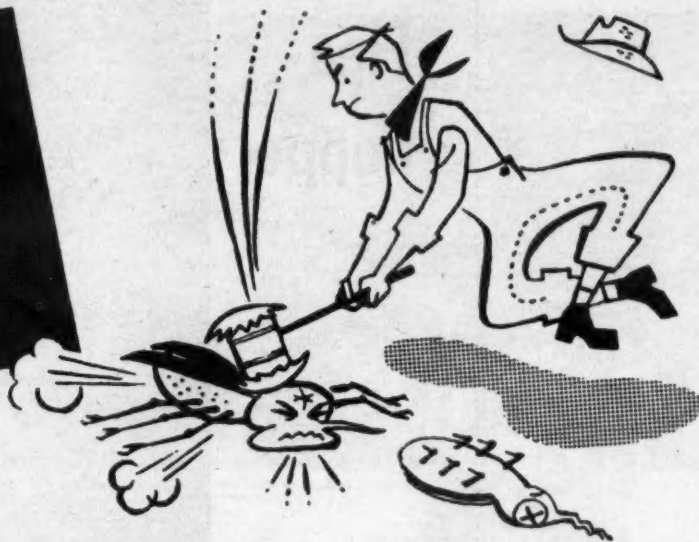
About 1,200 people are expected to attend. E. E. Heuermann, Atlanta district manager of Shell Chemical Corporation's agricultural chemical division, sponsor of the meeting, said the group would include county agents, representatives of agricultural chemical companies, in addition to farmers, growers and nurserymen.

This is the second workshop of its kind ever held. The first was sponsored by Shell Chemical in New York early this year and covered nematode problems in Northeastern states.

### Ruling on Herbicides

HASKELL, TEXAS—A number of farmers in the Rochester-Knox City area claim that early cotton has been damaged or ruined by drifting weed-killing sprays used in nearby areas. They recently asked the county commissioner's court of Knox and Haskell counties to regulate the use of hormone type herbicides.

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Leafhoppers  
Clover Root Borer

##### Cotton insects

Cotton Boll Weevil  
Cotton Fleahopper  
Cotton Thrips  
Rapid Plant Bugs  
Tarnished Plant Bugs  
Armyworms  
Cutworms  
Garden Webworms

##### Soil insects

Corn Rootworms  
White Grubs  
Cutworms  
Wireworms  
Seed Corn Maggot  
White Fringed Beetles (Larvae)  
Japanese Beetle (Larvae)  
Flea Beetles (Larvae)  
False Wireworms  
Root Weevil  
European Chafer  
Ants  
Asiatic Garden Beetle (Larvae)  
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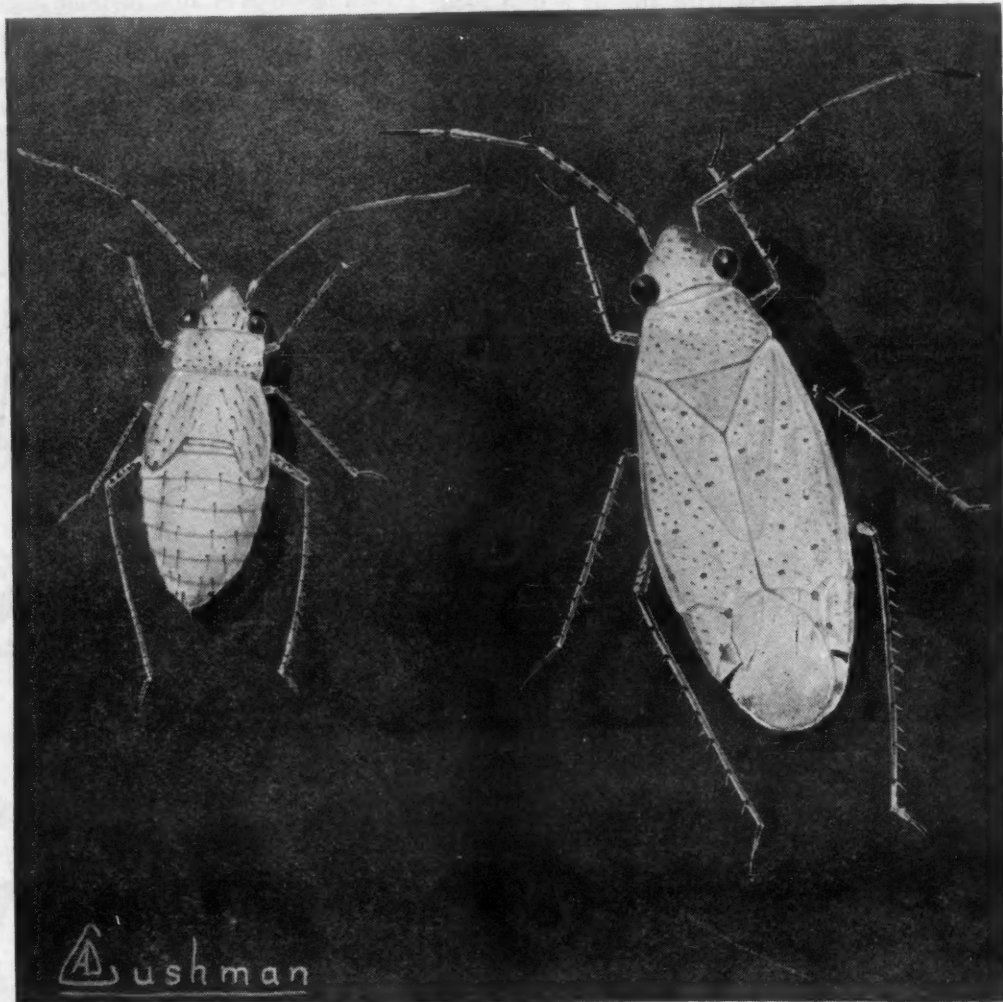
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# BUG OF THE WEEK

Mr. Dealer—Cut out this page for your bulletin board

## Cotton Fleahopper



### How to Identify

The adult fleahopper is about  $\frac{1}{8}$  in. long, flattened, elongate ovate in outline, with prominent antennae. The body is pale yellowish-green in color with minute black hairs and black specks over the upper surface. Its distribution is general throughout the cotton belt and over much of the U.S.

### Habits of the Fleahopper

This pest hibernates in the egg stage on various weeds. In southern Texas, it has appeared on horsemint early in March, migrated to cotton late in April, and deserted the cotton by the end of July to feed for the remainder of the season on other plants, including snap beans and potatoes. Eggs are yellowish white, about  $\frac{1}{30}$ th in. long and a fourth as wide. They are inserted beneath the bark, especially just below the growing tips. They hatch in just a little over a week and the greenish nymphs begin sucking the sap from terminal bud clusters. Nymphs molt five times and in from 10 to 30 days, are mature bugs.

### Damage Done by Fleahopper

This bug has caused serious damage to cotton in scattered areas throughout the south, by

sucking the sap from the very small squares and other terminal growth, resulting in excessive shedding and an abnormal whip-like growth of the plants.

### Control of Fleahopper

Recommendations for control materials, timing, application practices, dosages, etc., may vary widely in different states and sections of the country. It is therefore difficult here to attempt to give specific suggestions as to what materials should be used or how they should be applied. Local authorities such as county agents, state experiment station entomologists, and manufacturers of the various pesticides should be consulted for specific information. Labels on pesticide containers carry full instructions on use and dosages. Users should always be urged to study labels carefully before applying any insecticide on food or feed crops to avoid the risk of illegal residues at harvest time. Cultural methods of control include the eradication of weeds and the destruction of cotton stalks during the fall and winter, thus eliminating the environment for next season's population of fleahoppers.

Drawing of fleahoppers furnished Croplife through courtesy of Hercules Powder Co., Wilmington, Del.

## ALABAMA CONFERENCE

(Continued from page 1)

greater than the sum of the response to each used separately.

As a follow-up to Dr. Pearson's work, fertilizer industry representatives observed irrigation and fertilizer research studies at the Thorsby farm. One project specifically showed the interdependence of irrigation and high nitrogen applications for maximum cotton production. Without irrigation in 1956, a top yield of about 900 lb. seed cotton was made an acre and there was no response to nitrogen. At the intermediate level of irrigation, the highest yield was slightly more than 4,000 lb. an acre, with a response to 120 lb. nitrogen an acre. At the highest level of irrigation, the top yield was 5,000 lb. an acre with a response to 240 lb. nitrogen an acre.

At the opening program, C. E. Lloyd, director of chemical control, Virginia-Carolina Chemical Corp., reported on manufacturing problems with fertilizers containing minor elements and pesticides. He predicted that inclusion of minor elements in fertilizers will increase tremendously within the next few years.

With the increased usage of acid-forming fertilizers, magnesium may assume economic importance as a fertilizer. Dr. Fred Adams, experiment station associate soil chemist, reported, "Field, greenhouse, and laboratory studies are under way to determine the magnesium status of Ala-

bama soils and to define the level of soil magnesium necessary for optimum growth of plants," he said.

Dr. L. E. Ensminger, experiment station soil chemist, said most complete fertilizers sold in Alabama contain from 40 to 60% of their phosphorus in a water-soluble form. "Data indicate that some water-soluble phosphorus is desirable for most crops," he pointed out. "However, there is little indication of a need for more than about 40 to 50% water-soluble phosphorus in fertilizers."

J. C. Lowery, API extension service agronomist, praised the work of the Alabama Soil Fertility Society in advancing fertilizer education in Alabama. A report on sale and distribution of agricultural limestone in Alabama was made by William F. Nichols, Sylacauga Fertilizer Co. E. M. Evans, experiment station associate agronomist, discussed increasing the feed value of forage through fertilization.

Crop rotation, grazing, and plant variety trial studies were observed during a tour of the Auburn area. At the Chilton Area Horticulture Substation, fertilizer industry representatives viewed vegetable and fruit fertilizer and irrigation studies.

The API Agricultural Experiment Station and API Extension Service sponsored the conference in cooperation with the Alabama Soil Fertility Society.

which have been fumigated with methyl bromide are as follows:

(a) 5 parts per million in or on apples, pears, quinces.

(b) 20 parts per million in or on egg-plants, onions, tomatoes.

(c) 30 parts per million in or on beets, rutabagas, turnips.

(d) 50 parts per million in or on alfalfa hay, barley, beans, green beans, lima beans, snap beans, black-eyed peas, cocoa beans, corn, grain sorghum (milo), oats, rice, rye, wheat.

(e) 75 parts per million in or on potatoes, sweet potatoes.

(f) 200 parts per million in or on almonds, Brazil nuts, bush nuts, butternuts, cashew nuts, chestnuts, cottonseed, filberts (hazelnuts), hickory nuts, peanuts, pecans, pistachio nuts, walnuts.

The tolerance for residues of glyodin (2-heptadecyl glyoxalidine acetate) in or on peaches is 5 parts per million.

## Named to Michigan Chemical Research Staff

SAINT LOUIS, MICH.—Michigan Chemical Corp. has recently added Lynn H. Hahn to its research staff according to an announcement made by Dr. Dwight Williams, director of research.

Mr. Hahn was recently graduated from Alma College with a bachelor of science degree in chemistry. He has been assigned to projects concerned with rare earth chemicals at the company's research laboratories at Saint Louis.

## HEADS CLIMAX SALES GROUP

NEW YORK—George L. Innes has been appointed by Climax Molybdenum Co. to head the consolidated activities of the chemical sales and development for the company. Mr. Innes joined Climax in 1955 as manager of chemical sales. He was formerly with the Jefferson Chemical Co. as sales manager.



AUBURN AGRICULTURAL STUDENT HONORED—Frank Boyd of Montgomery, Ala., president of the Alabama Soil Fertility Society, presents a \$200 National Plant Food Institute scholarship to Leon Hartwell Allen of Opelika, Ala., during the Auburn fertilizer conference July 30, as two staff members of the Alabama Polytechnic Institute school of agriculture look on. Left to right are Dr. Howard Rogers, head of the agronomy and soils department; Mr. Boyd; Mr. Allen; and Dr. Joe Hood, associate professor of agronomy. Mr. Allen won the scholarship, which was given in the form of a check, for having the most outstanding agronomy and soils record as a junior at API. Mr. Boyd also presents him with a plaque which will remain in the API school of agriculture with Mr. Allen's name engraved on it along with the names of past recipients of the scholarship.

## Residue Tolerances Issued on Five Pesticidal Chemicals

WASHINGTON, D.C.—Tolerances for residues of a number of pesticides were announced July 18 by the Federal Food & Drug Administration. The materials covered in the announcement were methoxychlor, parathion, chlordane, glyodin, and inorganic bromides resulting from fumigation with methyl bromide.

The information was released as follows:

Tolerances for residues of methoxychlor (2,2-bis-(p-methoxyphenyl)-1,1-trichloroethane) are established as follows:

(a) 100 parts per million in or on alfalfa, clover, cowpeas, grass for forage, peanut forage, soybean forage.

(b) 14 parts per million in or on carrots (with or without tops) or carrot tops, currants, gooseberries, peanuts.

(c) 3 parts per million in the fat of meat from cattle, sheep, or hogs.

(d) 2 parts per million in or on the following grains: Barley, corn, oats, rice, rye, sorghum grain, wheat.

A tolerance of 1 part per million is established for residues of parathion (O,O-diethyl O-p-nitrophenyl thiophosphate) in or on the following raw agricultural commodities: Alfalfa, barley, clover, corn forage, grass for forage, hops, oats, olives, pea forage, vetch, wheat.

A tolerance of 0.3 part per million is established for residues of chlordane (1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene) in or on sweetpotatoes.

The tolerances for residues of inorganic bromides (calculated as Br) in or on raw agricultural commodities



Photo by Georgia Agricultural Extension Service

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Fall nitrogen topdressing is the best way for your customers—and you—to beef up profits. DIXIE's widespread fall advertising campaign is showing them that their best nitrogen buy is DIXIE because:

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**BARREL #1:** Nitrate Nitrogen for quickest and biggest growth gains.

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DIXIE is the farmer's cheapest source of solid nitrogen. He gets, for the same money, up to 60% more actual nitrogen from DIXIE than from nitrate of soda.

This fall, stock and sell the nitrogen that's being pre-sold for you. The nitrogen that's

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AMMONIUM NITRATE

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IT'S DOUBLE BARRELED

## Southwest Fertilizer Conference Hears Industry Leaders Outline Sales Program

GALVESTON, TEXAS—Fertilizer recommendations for a number of crops, a review of the proposed expansion program of the National Plant Food Institute, and a discussion of state fertilizer laws featured the Southwestern Fertilizer Conference and Grade Hearing held at the Buccaneer Hotel, Galveston, July 17-19.

In attendance were fertilizer industry representatives, state control officials and their families. Most of these were from the area comprising the states of Texas, Oklahoma, Mississippi, Arkansas, Louisiana and New Mexico, but many basic producers were also present from New York, Washington, Atlanta, Chicago and the West Coast.

In charge of the opening session on July 18, was Stanley Hackett, Dixie Fertilizer Co., Shreveport, La.

On the program was Dr. Russell Coleman, executive vice president of the National Plant Food Institute, Washington, D. C., who explained the purpose of the new expansion program of the Institute, making use of charts and slides. As had been outlined earlier at the NPFI convention at the Greenbrier Hotel during the NPFI's June convention (CROPLIFE June 17, page 1) Dr. Coleman told the group that the program comprises three main objectives:

1. To broaden and strengthen fertilizer research through increased grants to universities and colleges.
2. To initiate a farm demonstration program in cooperation with state and federal agencies.
3. To develop more specific informational programs based on the

results from research and demonstrational projects.

"The plan will be principally concerned with developing the present market potential," he said. "Farm demonstrations conducted in local areas will give the Institute information on which it can project a broad localized informational program."

Dr. Coleman mentioned that the first step in the expansion program will be the employment of four regional managers and the establishment of regional Institute offices.

Dr. J. F. Fudge, state chemist, Texas A.&M., presided over the Southwestern Annual Fertilizer Grade Hearing on Friday, July 19.

Henry DeSalvo, head of the feed, fertilizer and pesticide division, Arkansas State Plant Board reviewed the recent Arkansas laws that have been adopted. He said that provisions in the new law call for:

1. Requiring reporting of shipments by invoice.

2. Setting registration fees on brands.

3. Setting penalties for deficiencies in nitrogen, available phosphoric acid, and potash.

4. Setting penalties for weight shortages.

5. Empowering the plant board to set penalties on other guaranteed constituents not mentioned in regulations.

6. Empowering the plant board to issue stop sale on any shipment found deficient and require same to be relabeled by manufacturer or returned to plant for reformation.

Dr. R. L. Beacher, director of the Arkansas soil testing laboratory, described the fertilizer ratios recently approved in Arkansas as being: 0-1-0-1-2, 0-2-1 1-1-0, 1-1-1, 1-1-2, 1-2-2, 1-4-4 and 3-4-6.

Minimum grades recommended are 0-14-14, 0-10-20, 0-16-8, 10-10-0, 8-8-6-12, 5-10-5, 5-10-10, 3-12-12 and 6-8-12. Other ratios permitted in Arkansas are 0-2-3, 1-3-6, 1-3-9, 2-3-6 with the minimum grades for them being 9-10-15, 3-9-18, 3-9-27, and 6-8-27.

Dr. M. B. Sturgis, head, agronomy department, Louisiana State University, summarized the general fertilizer recommendations of the agronomists from Louisiana on cotton, corn, oats, sugar cane, and pasture lands. He went into considerable detail in describing the types and amounts of plant foods to be applied for various soils, with the largest recommendations being in the treating of pastures. Here, applications of 400-800 lb. an acre of 3-12-12, 5-10-10, 4-12-8 5-10-5, or 8-8-8 grades or equivalent amounts of higher multiples are recommended.

Some soils in the alluvial areas are low in available phosphorus and potassium, he pointed out. Most of the soils in the upland areas are in need of lime, thus samples from the areas to be put in pasture should be sent to the soil testing laboratory in order to obtain more specific information about the fertilizer and lime requirements for pastures on each farm, he said.

Park Yeates, director of feed and fertilizer division for Oklahoma, represented that state, pointing out that the approved ratios and grades for 1957-58 would be essentially the same as for the past season.

Dr. J. F. Fudge, Texas state chemist, mentioned that the approved Texas grades for 1957-58 would be released in the near future.

The new planning committee was named as follows: Mr. and Mrs. Stanley Hackett, Dixie Fertilizer Co., Shreveport, La., with Mr. Hackett to continue as chairman; Dr. and Mrs. J. F. Fudge, College Station, Texas; Dr. and Mrs. Niven Morgan, American Potash Institute, Shreveport, La.; Mr. and Mrs. R. M. Morehead, Oil Mathieson Chemical Corp., Little Rock, Ark.; Mr. and Mrs. Harold Trammell, Farmers Fertilizer Co., Texarkana, Texas; Mr. and Mrs. Jordan Thorne, Grand River Chemical Division of Deere & Company, Prior, Okla. and Mr. and Mrs. Tom Wright, Texas Farm Products Co., Nacogdoches, Texas. Dr. Paul J. Talley, Monsanto Chemical Co., St. Louis, Mo. was named publicity chairman.

Aside from the business portions of the meeting, social activities included two receptions and a dance. The golf tournament was headed by Tom Wright, Texas Farm Products Co., Nacogdoches, Texas.

The group voted to hold its 1958 meeting at Galveston, in the same hotel. Dates of the meeting are July 16-19.

**NEW EXTENSION AGRONOMIST**  
URBANA, ILL.—Sam R. Aldrich has been appointed professor of agronomy extension specializing in soil fertility at the University of Illinois College of Agriculture, M. B. Russell, head of the agronomy department, has announced.



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## WORLD REPORT

By **GEORGE E. SWARBRECK**  
Croplife Canadian and Overseas Editor

### Consumer Preference Survey in Canada

Consumer preference surveys are rapidly becoming a valuable minor industry in North America. Large amounts of money and time are spent by the big food corporations, for instance, in finding what appeals to the taste buds of the homemaker and her family. The findings can change the whole program of a marketing campaign.

Now scientists in Canada are doing a "consumer preference survey" of insects. This will enable them to determine what foods are rejected by insects and why. It could be that the research men will be able to develop insect-resistant plant varieties. A follow-up to the survey might be the development of newer insecticides that make a plant distasteful to pests. Here may lie a whole new field of progress for the insecticide industry.

It is true that many pests are proving resistant to some insecticides. This problem was recently the subject of a full scale international conference at Geneva, Switzerland. Scientists from North and South America and from India, Africa and Europe met under the chairmanship of K. D. Quarterman of the U.S. Public Health Service to discuss a program of coordinated research into the problem. Many years ago it was discovered that flies are developing an immunity, and in more recent years malaria mosquitoes are showing a similar resistance.

More than 150 laboratories throughout the world are currently working on the problem, and the task of the conference was to suggest a plan of coordinated research.

### Fertilizer Expansion in Yugoslavia

The government of Yugoslavia has adopted a plan which will see the use of fertilizers rise to 2.2 million tons during the next five years. In 1956, only 540,000 tons were used. The increase will be brought about in two ways—greater domestic production and more imports.

Existing facilities are to be expanded and new plants constructed. Three new factories with a capacity of 1.2 million tons were to have been built with Russian credits, but the negotiations broke down when the terms proved unacceptable. Now that the Tito Communists are playing footsie with their Russian counterparts again, the negotiations have been renewed and it is possible that the credits will be made available. If so, then the plants will be ready within five years to produce not 1.2 million tons, but 1.7 million tons of fertilizer.

### Britain's ICI Plans Project

Imperial Chemical Industries, Ltd., a leading British fertilizer producer, is asking permission of the local authorities in western England to develop a site of 1,000 acres on the Severn river, near Thornbury, for the manufacture of organic and inorganic chemicals.

If the necessary approval is forthcoming, the company may spend \$280 million between now and 1975.

Most of the company's existing plants for fertilizer production are located in northern England, but a large proportion of the market lies

in the Midlands and southern areas. The new factory will be in a good position to supply this market, company officials say.

• • •  
The construction of a new potash fertilizer plant has started in Sicily. Contractor is Montecatini, builder of many plants in foreign countries, and the factory will be capable of supplying the whole of Italy's potash needs.

• • •  
France's exports of potash, in terms of  $K_2O$  content, to non-French

territories in 1956 totaled 664,000 tons, against 532,000 tons in 1955. The output of concentrates by the government potash mines in 1956 amounted to 2,490,000 tons, compared with 2,110,000 tons in the previous year.

### New Fertilizer In Canada

Three of the Ontario plants of Canadian Industries, Ltd., are to commence production of a new type of moisture-free fertilizer. It is produced by what is known as the continuous granulation process, and the final result is a "non-caking homogeneous compound fertilizer," the firm states.

The plants at which the new product will be manufactured are located at Hamilton, Chatham and Ingersoll, serving markets in central and southwestern Ontario.

Installation of the necessary equipment at each location will begin im-

mediately and all projects, the company states, are expected to be completed early in 1958. Design and construction are under the supervision of CIL's engineering department.

The new process allows production of the important moisture-free fertilizer which can be applied easily and uniformly with the equipment already used by farmers.

### Jordan's Agriculture To Be Aided

The report of the World Bank survey mission, recommending a 10-year economic development plan for Jordan, deals mainly with proposals for improving the country's agriculture. Cost of the plan is set at nearly \$118 million.

Increasing yields to the acre is dealt with at length in the report and fertilization plays a prominent part in the bank's recommendations. A revival of the potash industry and of phosphate mining is strongly recommended to the government.

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## 1958 SOIL BANK

(Continued from page 1)

which there has already been tentatively allotted \$178 million for the wheat crop.

According to USDA soil bank analysts, this will mean that on the basis of contemplated acreage reserve payments for wheat land put into the soil bank, they will be able to take out only about 8.5 million acres of wheat land in 1958 as compared with an estimated soil bank reduction in wheat acreages in 1957 of about 12.7 million acres.

Soil bankers indicate that they are pessimistic on the success of any acreage reserve program operation in the wheat community this coming year. They say that wheat is a greater problem to them than corn since the wheat farmers are by and large heavier operators than in the corn belt and since Congress has written into the soil bank a ban on payments to individual farmers of more than \$3,000.00 for any individual farm under the Acreage Reserve Program it seems unlikely that any substantial reduction in wheat is probable.

The conservation reserve program limitation for individual farms for 1958 remains unchanged

with a maximum annual payment of not more than \$5,000.00.

In the wheat community on the basis of funds available it would appear that wheat land put into the soil bank ARP this year will be reduced about 40% from 1957.

Total wheat soil bank funds allotted for the 1958 crop are slightly less than \$180 million. This is expected to work out to a national average rate for wheat land in the 1958 ARP program of about \$20.88 an acre if the available wheat price support is figured on average support of \$1.78 a bushel.

The diminishing effect of the soil bank for corn is equally bad as far as soil bank operations are concerned. In 1957 the soil bank ARP program for corn amounted to approximately 217 million dollars. For 1958 this amount will probably be cut to about 143 million.

In terms of acres which would be available for soil bank contribution the 1958 program would cut the corn share about in half or down to 2.8 million as compared with a corn soil bank ARP participation in 1957 of 5.25 million.

On the basis of simple arithmetic it must appear that the total number of farm units or acreage in the wheat and corn phase of the ARP program in 1958 will be markedly cut.

All this indicates to observers here that the soil bank will have a negligible or minus effect on the use of plant foods and pesticidal chemicals in the wheat and corn economy in 1958.

In fact the reduction of potential acreage in the ARP program for 1958 for these crops plus the cross-compliance provision freezing soil bank contributing farms to the 1956-57 total soil bank crop acreage base, will discourage soil bank operations for 1958 and even widen the market for the protective and productive chemicals.

As soil bank operations are modified it becomes clearer that opinions held in Congress and in industry that the soil bank should have concentrated on larger funds for the ACP programs of the past appear to be more than justified.

The soil bank is now seen as a faulty mechanism which was designed for a life of three years during which time USDA would have been able to reduce production of crops in Commodity Credit Corp. surplus stocks, while vigorous export disposal

was conducted through the provisions of Public Law 480. Success of the latter, a great government expense, has been in some degree successful but the soil bank has exhibited only a vague and uncertain measure of effectiveness.

This coming season will be the third year of soil bank operations. It now seems, on the basis of reduced spending power, to be no closer to its goal than when it started. It has only limited success—that of disbursing taxpayers' money, although in a negative way it might lay claim to success since had it not been in operation supply conditions might have been worse!

All these spurious devices would appear to assign a very low degree of intelligence to the average farmer whom it is now suspected is becoming weary of the sugar-coated pills from the National legislature.

It may be a prudent guide for the fertilizer and pesticidal chemical industries to look at the reverse side of the farmer coin and safely conclude that Mr. Farmer is not the fool the politicians would make him seem. Perhaps sound business advice for these chemical industries would be to pursue the sound course that common sense and business acumen indicate and suggest to their farmer customers that the best avenue to profitable farming is to cut the per unit costs and let politically-minded farm politicians catch up with the farmer's decisions at some later date.

## NAC MEETING

(Continued from page 1)

al Problems," by Roswell Garst, a partner of the Garst & Thomas Hybrid Corn Co., Coons Rapids, Iowa.

Thursday, Sept. 5, is being held open for NAC committee meetings.

The Friday, Sept. 6, program will feature a presentation on communication techniques to aid in market development and in boosting product sales. The presentation, entitled "What Motivates Growers to Buy Pesticides," will be made by Drs. J. M. Bohlen and G. M. Beal, department of economics and sociology, Iowa State College, Ames.

Officers and three new members of the board of directors of the association will be elected during the meeting.



D. A. Scott

## D. A. Scott Joins Chase Bag Co.

CHICAGO—Chase Bag Co. has announced the appointment of D. A. Scott as a sales representative for its packaging products in southern Idaho and eastern Oregon. He will establish headquarters at Boise soon, according to J. W. Wells, sales manager for the Chase Bag Co. Portland branch.

## Books on Pesticides

## WEEDS—Second Edition (1955)

W. C. Muenschner

Entire book has been revised and reset, with descriptions of seventy weeds added to the original list of five hundred, plus twelve new full-page plates depicting nineteen kinds. Keys and full descriptions provided for identification with detailed illustrations of 331. Types and sources of weeds, their means of reproduction and dissemination, and the amount of damage they inflict on crops. Specific directions for control, with reference to chemical methods of recent discovery ..... \$10.00

## CHEMICAL BUSINESS HANDBOOK

Dr. John H. Perry

1,300 double column pages, the equivalent of several average books; 700 illustrations, by 124 contributors. Market research data section is 280 pages, business mathematics 200 pages, financial and accounting 142 pages, research and development 150 pages, sales and advertising 92 pages, twenty sections in all. The book deals with chemical management problems and is useful to technical men, engineers and executives, in the chemical and allied fields. Dr. Perry is editor of the Chemical Engineers Handbook, a companion publication ..... \$17.00

## INSECT PESTS OF FARM, GARDEN and ORCHARD Fifth Edition (1956)

Leonard M. Peairs and Ralph H. Davidson

A standard text for 44 years. Includes insects affecting grasses, grains, cotton, legumes, vegetables, flowers, fruits, stored products, household goods and domestic animals. Contains a new chapter on insecticide formulations, spray mixtures, application equipment, etc. Material on forty new pest species added, including drastic changes in the illustration. 661 pages ..... \$8.50

## DDT and NEWER PERSISTENT INSECTICIDES

T. F. West and G. A. Campbell

The first and major part of book is devoted to the physical and chemical properties, manufacture, formulation and applications of DDT. The second part deals with other chlorinated hydrocarbons whose insecticidal properties have been discovered recently and compares these new insecticides with DDT. The preparation of aqueous suspensions, solutions, emulsions, and dusts containing DDT, the compatibility of DDT with other insecticides, fungicides and additions are covered in detail. Contains dozens of tables on the solubility of DDT in various solvents, the catalytic activity of accessory substances in the presence of DDT, analogues of DDT, the comparative toxicity, hydrolysis and solubility of DDT analogues, the toxicity of DDT for almost all important insects, etc. Many illustrations ..... \$8.50

## APPLIED ENTOMOLOGY—Fifth Edition

H. T. Fernald and Harold H. Shepard

This text since 1921 has had an outstanding record of usefulness. The Fifth Edition preserves the general organization and coverage, with changes to improve the presentation and to incorporate new knowledge. Contains chapters on anatomy, physiology and development. The economic importance and control of insects are discussed in a general way with much attention to insecticides. The classification of insects is emphasized, with examples drawn from species conspicuous for being very harmful or decidedly beneficial. Specific control measure included for injurious forms. Last chapter considers other pest animals closely related to insects. 385 pages ..... \$7.00

## DISEASES OF FIELD CROPS—Second Edition (1956)

James G. Dickson, Professor Plant Pathology, University of Wisconsin

Covers the diseases of cereals, grasses, legumes and fiber plants, which are the major food, feed and fiber sources throughout the world. More than 60 diseases incited by viruses, 40 by bacteria and 300 by fungi are listed and discussed in relation to field crop plants. Identification and information basic to its control, with emphasis on the problems of crop rotation, adaptation and the use of disease resistant varieties. This revised edition includes several new diseases, new illustrations and much recent research in the field ..... \$8.50

## THE GARDENER'S BUG BOOK (1956)

Dr. Cynthia Westcott

The Complete Handbook of Garden Pests and their control. Information, scientifically accurate but easy to read on 1,100 insects, mites and other animal pests that attack trees, shrubs, vines, lawns, flowers, fruits and vegetables in home gardens. Illustrations in full color. Control measures combine the latest in chemical developments with time-honored cultural measures. Helpful to all who serve the general public and to truck farmers and fruit gardeners. 579 pages, cloth bound ..... \$7.50

## THE CHEMISTRY AND ACTION OF INSECTICIDES

Harold H. Shepard, Entomologist, U.S. Department of Agriculture, formerly Associate Professor of Insect Toxicology, Cornell University.

Treats the chemistry of insecticides, the history of their use, their commercial importance here and abroad, the nature of the major uses, the influence of environment on effectiveness. Materials are arranged according to their chemical relationships. Two chapters relating to organic compounds largely new as insecticides. Illustrative data in form of tables, and a convenient appendix of equivalents arranged for practical use in the field. 504 pages ..... \$8.00

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## INSECT, FUNGUS AND WEED CONTROL

Dr. E. R. de Ong

The information is grouped according to field of application rather than to chemical composition or nomenclature. Chapters on insecticide label, seed disinfectants, herbicides, forest insects and diseases, livestock insects, and the pests found in household and industry. Fumigation of warehouses, residual sprays and preservatives for fruits, vegetables and wood products are covered. An up-to-date guide on pest control with the needs of operators, agricultural and structural specialists carefully considered. Shippers and warehouse personnel will find the book useful ..... \$10.00

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A. B. Chadwick

### Velsicol Names New Manufacturing Chief

CHICAGO—A. B. Chadwick has been appointed director of manufacturing for Velsicol Chemical Corp., according to E. T. Collinsworth, Jr., executive vice president. Mr. Chadwick will supervise the manufacture of Chlordane, Heptachlor, Endrin and Methyl Parathion insecticides, hydrocarbon resins, solvents, and other chemical products at the Velsicol plants in Marshall, Illinois, and Memphis, Tennessee.

Mr. Chadwick obtained his B.S. in chemical engineering at Lehigh University in 1939. He has since worked in supervisory and executive chemical manufacturing positions with Allied Chemical and Dye Corp., Pennsylvania Coal Products Co., and Koppers Company, Inc. For two years, Mr. Chadwick resided in Sao Paulo, Brazil, where he served as plant manager for Koppers. Before coming to Velsicol, he was in charge of industrial engineering in the chemical division of Koppers.

### FREIGHT INCREASE

(Continued from page 1)

only with higher tariffs on outbound, but also on inbound supplies to their plants.

Trade officials here pondering the new ruling are said to be "most unhappy fellows" to put it mildly.

That the ruling is permissive on the part of the carriers does not provide much comfort for the fertilizer industry. In other fields where truck competition has steadily reduced rail tonnage through lower tariffs, the carriers are now attempting to hold or win back traffic volume through reduced freight rates. In the fertilizer field however, this competitive balance does not exist and the best guess here is that the carriers will go through with the permissive rate boost on schedule effective Aug. 21.

### Seed Dealers' Fees Increased in Oregon

PORTLAND, ORE.—The first Oregon seed dealers' license fee increase in 20 years was authorized by the 1957 legislature. The license fee will be increased from \$2.50 to \$5. This was one of three amendments to the Oregon seed law.

Amendments also changed from 12 to 18 months the time which can elapse between the last germination test and the sale of agricultural or vegetable seeds. Seed dealers are now required to keep on file for department of agriculture inspection the original or duplicate copy of the latest test.

This test report must show the date and name of the person making the test, as well as the germination.

### USDA Develops New Alfalfa Variety Resistant To Spotted Aphid Pest

WASHINGTON, D.C.—A new non-winter hardy variety of alfalfa, highly resistant to the spotted alfalfa aphid, has been developed, the U.S. Department of Agriculture reports. The new alfalfa, named "Moapa," was developed by the crops research division of the USDA's agricultural research service, and the University of Nevada Agricultural Experiment Station, of the Max C. Fleischmann College of Agriculture, in cooperation with USDA's Entomology Research Division.

The breeding work for this new variety was headed by Dr. Oliver F. Smith, with Richard Peaden assisting during the latter phases of the program. Both are USDA agronomists. Dr. Wayne Howe, USDA entomologist at Bakersfield, Calif., assisted with the spotted alfalfa aphid resistance tests which

were necessary in developing this variety.

Moapa is the second variety developed in Nevada that is highly resistant to the spotted alfalfa aphid. It consists of spotted alfalfa aphid resistant plants selected from the susceptible variety African. It is therefore much like African in growth habit, and is expected to give best performance in areas where African is now a recommended variety.

### SHEEP PEST CONTROL

(Continued from page 1)

ly infested with the botfly larvae. For comparison purposes, an equal number of infested ewes did not receive this drench treatment.

A single treatment was 100% effective in killing the first instars, or young larvae, in all the treated animals except one. The same treatment killed 60% of the second instars, but appeared to be ineffective against the

third instars, or more fully grown larvae.

Since the first instars usually are in greatest numbers during late fall and early winter, application would be most effective at that time.

One of the most widely used compounds for controlling sheep botflies is a saponated cresol solution, administered through a hose inserted in the sheep's nostrils. Treatment with the new material is simpler since it can be administered orally with a dose syringe, or drenching gun, USDA says.

### WITCHWEED SPREADS

DARLINGTON, S.C.—Witchweed has been discovered in a fifth South Carolina county, Darlington, according to Wilda Gray, county agent. The parasite which attacks the root systems of corn, sugar cane, sorghum, and several grasses is the cause of a quarantine in several counties in the Carolinas.

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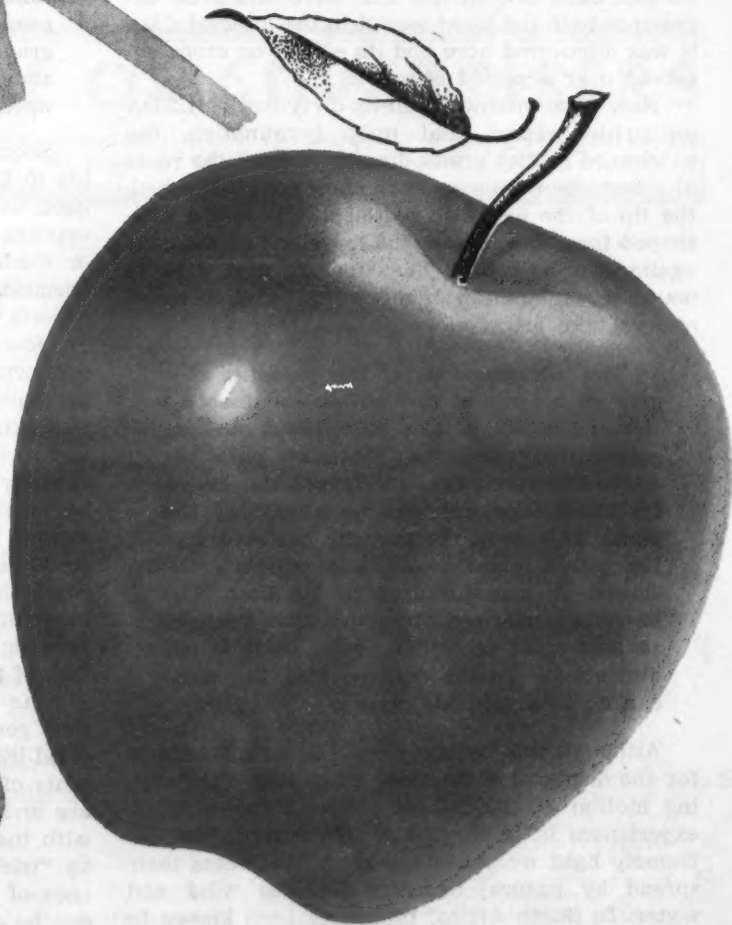
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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

## Presence of Witchweed Poses Big Control Problem

Preventing the further spread of witchweed, a parasitic plant that attacks corn, sorghum, sugarcane and plants of the grass family, is occupying a considerable amount of attention from the U.S. Department of Agriculture. The plant was discovered in the Carolinas in 1951, although farmers in the area believe it has been present since 1950 and still others recall symptoms of the weed's parasitic work as early as 1946.

An interesting history of this pest's discovery and the USDA's efforts to keep it under control through quarantines, chemical treatments and other methods is given in a special report issued recently by the Agricultural Research Service. Witchweed has long been known in the Old World tropics and subtropics but its appearance in South Carolina is the first known presence in the Western Hemisphere. No one knows how it was introduced into the United States.

The weed is considered to be a pest of great economic importance since it can cause complete losses of corn in the event of heavy infestation. It can affect other crops badly, too, and its work is sometimes mistaken for drouth or other conditions.

Quarantine measures outlined by USDA mark one way devised to contain the plant and to prevent its spread to other areas. However, the task is great, because a single plant can produce from 50,000 to 500,000 seeds so small that they can barely be seen by the naked eye, and can be moved by wind and water, and in soil carried from fields. The long-term aspects of controlling this pest are noted in the fact that the seeds may lie in the soil for as long as 20 years waiting for a host plant to appear.

Information about witchweed derives almost entirely from other countries. Its life history, research information and such methods of control as are known all come from scientific literature abroad. Scientists in the U.S. have had little experience with the plant except in the interval since it was discovered here and its effects on crops observed over a period of years.

How does witchweed do its dirty work? USDA authorities report that upon germination, the witchweed rootlet grows directly toward the roots of a host plant. As soon as the host root is touched, the tip of the parasitic rootlet swells into a bell-shaped form and presses the large end of the cone against the host root. Then for the next 8 to 24 hours, a combination of mechanical and chemical actions take place.

The advance cells of the parasitic root give off a ferment that softens or dissolves the cell walls of the host tissue and as penetration continues, the cone puts out finger-like tubes that reach into the vascular bundles or nutrient "pipelines" of the plant. This done, the parasite has access to the juices, plant foods, and minerals absorbed or manufactured by its host. The parasite sends out "innumerable" tenacles to feed upon accessible roots, so it is not difficult to see the damage that the weed can do to a valuable crop.

Although this outlaw weed has no mechanism for the dispersal of its seeds other than the swaying motion of the parent plant in the wind, it experiences little trouble in this regard. The extremely light weight of the seeds facilitates their spread by natural agencies such as wind and water. In South Africa, they have been known to spread as far as seven miles in a windstorm. No measure has ever been made as to how far seeds might spread via water.

Here is the main factor, however, that makes quarantine measures so feasible: since the seeds drop to the ground and mingle with the earth, anything that carries soil or dust can also carry these nearly microscopic seeds. They can be spread

in the field by the movement of soil along rows or from field to field by farm implements and machinery. They can mingle with the soil adhering to transplants and root crops and with the dust that accompanies hay and cereal crops. They can also be carried on a farmer's shoes or in his pants cuffs, or on the feet of birds and animals.

An example of how the weed spreads is seen in records from the Mazoe Valley of Rhodesia. The pest was first reported there in 1916, during World War I, but nothing was done about halting the weed's development. By 1932, more than 70,000 acres of corn in the valley were seriously affected by the depredations of the weed. In other parts of Africa, the weed has been present so long that no records exist of its original infestation and spread.

Since opinions differ as to the length of time that witchweed has been in the U.S., no one actually knows, nor is it clear how it happened to arrive in the Carolinas. This much is certain, however: the weed is now present and must be dealt with in one way or another. Chemical controls and quarantines seem to be the present answer.

Some of the problems involved in the working out of details for a quarantine include the movement of soil (containing witchweed seeds) by machines and equipment used in custom baling, combining, irrigation and tiling, and the handling of peanuts and tobacco. The latter poses a special problem because of rain-splashed soil on the lower leaves. Peanuts also present a problem because of the dirt and seeds that cling to the hulls.

So far as chemical controls of witchweed are concerned, they are effective only if they are applied at or just before flowering, according to the results of African experiments. Pre-emergence sprays have not been effective in controlling the pest, nor have post-emergence sprays except at the flowering stage, USDA says. When applied at this time, however, 1 pound 2,4-D an acre will completely kill the plants that show above ground and thus provides protection for about a month, after which the parasitic weed rarely appears.

Should the weed infest crops that are susceptible to 2,4-D, the USDA says that DNBP may be used with diesel oil for control. When the pest appears in uncultivated fields or along fencerows or roadsides, it should be treated with effective herbicides to prevent its flowering and seeding, the experts point out.

How about the prospects for a quick victory over witchweed? USDA officials say that chances for such an achievement are not bright. "A plant that produces multitudes of seeds so feather light and so exceedingly small that they can be spread casually into the soil and over distances, will not be easily disposed of," the ARS bulletin comments. "This is especially true when these same seeds may have a patient dormancy in the soil of nearly a human generation if they are not in the meantime stimulated by the root of a host plant growing through the earth within one-tenth of an inch of them."

One of the hopes of control lies in the fact that germination of witchweed seeds are stimulated by the release of a "host extract" from the roots of corn or other susceptible plants. Studies are under way to find out more about this factor with the idea in mind that if witchweed seeds can be "tricked" into germinating without the presence of a host plant to sustain its life, the pest can be effectively slowed down.

Seldom is any new pest so fraught with unusual habits, mysterious origin, or problems of control. Witchweed is likely to be with us for some time, and its control will require the combined efforts of not only government scientists, but herbicide industry experts, soils people, and farmers themselves, who must be alerted to watch for presence of the weed.



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

Editor

DONALD NETH

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WASHINGTON CORRESPONDENT — John Cipperly, 604 Hibbs Bldg., Washington, D. C. (Tel. Republic 7-8534).

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MEETING MEMOS

Sept. 5—Annual Farm Day, State College, New Mexico. Gordon B. Hoff, program chairman.  
Oct. 18-20—Carolinas-Virginia Pesticide Formulators Assn., Carolina Hotel, Pinehurst, N.C. W. R. Peele, 516 S. Salisbury, Raleigh, N.C., secretary.  
Oct. 3-4—Iowa State College Fertilizer Manufacturer's Conference and Fertilizer Dealers' Short Course, Memorial Union, Iowa State College campus, Ames, Ia.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

Aug. 13-14—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Ohio Agricultural Experiment Station, Secretary.

Aug. 14—Connecticut Agricultural Experiment Station Field Day, Mt. Carmel, Conn., Dr. James G. Hersfall, New Haven, director.

Aug. 21-22—Shell Nematology Workshop, Orlando Municipal Auditorium, Orlando, Fla.

Aug. 26-28—American Society for Horticultural Science, annual meeting in conjunction with annual meeting of American Institute of Biological Sciences, Stanford University, Palo Alto, Cal.

Aug. 28-31—Soil Conservation Society of America, Annual Convention, Asilomar, Cal.

Sept. 4—Kentucky Fertilizer Conference, Campbell House, Lexington, Ky

Sept. 4-6—National Agricultural Chemicals Assn., Annual Meeting Essex & Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington 6, D.C., Executive Secretary.

Sept. 5-6—Great Lakes States Ammonia Meeting, Michigan State University, East Lansing, Mich.

Sept. 6—Annual Agronomy Fall Field Day, University of Nebraska, Lincoln; Clinton Hoover, extension agronomist, chairman.

Sept. 8-15—International Congress of Crop Protection, Hamburg, Germany.

Sept. 24-25—New England Fertilizer Conference, Bald Peak, Colony Club, Melvin Village, N.H.

Oct. 2-4—Eleventh Annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Oct. 3—New Jersey Fertilizer Conference, Rutgers University, New Brunswick, N.J.

Oct. 3-5—Pacific Northwest Plant Food Assn., Annual Convention, Sun Valley, Idaho, Leon S. Jackson, Lewis Bldg., Portland 4, Ore., Secretary.

Oct. 7-8—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., O. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 14—Sixth Annual Sales Clinic of the Salesmen's Assn., American Chemical Society, Hotel Roosevelt, New York.

Oct. 15—Association of Official Agricultural Chemists, 71st Annual Meeting, Washington, D.C., Dr. William Horwitz, Box 540, Benjamin Franklin Station, Washington, D.C., secretary-treasurer.

Oct. 17—Conference on Chemical Control Procedures for Industry Chemical Control Analysts, Shoreham Hotel, Washington, D.C. Sponsored by National Plant Food Institute.

Oct. 18—Association of American Fertilizer Control Officials (States Relations Committee, 8 p.m. Oct. 17), Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Box 392, Clemson, S.C., Secretary-Treasurer.

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Dec. 1-3—Southern Seedsmen's Assn., Jung Hotel, New Orleans.

Dec. 2-5—Entomological Society of America, 5th Annual Meeting, Hotel Peabody, Memphis, Tenn., R. H. Nelson, 1530 P St., N.W., Washington 5, D.C., Executive Secretary.

Dec. 2-5—Cotton States Branch, Entomological Society of America, 32nd Annual Meeting, Hotel Peabody, Memphis, Tenn., M. E. Merkl, Box 202, Leland, Miss., Secretary-Treasurer.

Dec. 9-12—Chemical Specialties Manufacturers Assn., Hollywood Beach Hotel, Hollywood, Fla.

Dec. 10-12—North Central Weed Control Conference, 14th Annual Meeting, Hotel Savory, Des Moines, Iowa, Lyle A. Derscheld, agronomy department, South Dakota State College, Brookings, Program Chairman.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 12-13—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Tenn.

1958

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TRADE MARKS

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HELP WANTED

SALES OPPORTUNITY — LONG ESTABLISHED and expanding fertilizer company has opening for salesman willing to work. Age 25-35. Northwest Illinois territory. Farm background of agricultural selling experience desirable. Salary and incentive plan. Address Ad No. 3974, Croplife, Minneapolis 1, Minn.

MISCELLANEOUS

For Sale, Surplus  
COPPER SULPHATE

53,000 lbs. crystal, all or part, at substantial discount.

THE SHWAYDER COMPANY

684 E. Woodbridge  
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WOodward 1-4946, Dept. 23

FOR FAST ACTION  
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Monsanto Chemical Co.	
National Potash Co.	
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Carolinas-Virginia Pesticide Assn., Carolina ... W. R. Peele, ... Raleigh, N.C., sec-

Iowa State College Fertilizer Manufacturer's Conference ... Short Memorial Union, Iowa ... campus, Ames, Ia.

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Connecticut Agricultural Station Field Day, Mt. ... Dr. James G. Hers-Haven, director.

Shell Nematology Work-ando Municipal Auditorio, Fla.

American Society for al Science, annual meet-onjunction with annual of American Institute of Sciences, Stanford Uni-alo Alto, Cal.

Soil Conservation Soci-merica, Annual Conven-mar, Cal.

ntucky Fertilizer Confer-ppell House, Lexington,

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### HELP WANTED

SALES OPPORTUNITY — LONG ESTABLISHED and expanding fertilizer company has opening for salesman willing to work. Age 25-35. Northwest Illinois territory. Farm background of agricultural selling experience desirable. Salary and incentive plan. Address Ad No. 2974, Croplife, Minneapolis 1, Minn.

### MISCELLANEOUS

## For Sale, Surplus COPPER SULPHATE

53,000 lbs. crystal, all or part, at substantial discount.

THE SHWAYDER COMPANY

684 E. Woodbridge

Detroit 26, Michigan

WOodward 1-4946, Dept. 23

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Minerals & Chemicals Corp. ....  
Mississippi River Chemical Co. ....  
Monsanto Chemical Co. ....

National Potash Co. ....  
Naugatuck Chemical Div., U. S. Rubber Co.  
Niagara Chemical Division Food  
Machinery & Chemical Corp. ....  
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# A Complete Sales Medium...

**CROPLIFE** is the only *complete sales medium* directed to the agricultural chemical industry. It is a *weekly* newspaper appealing to all segments of the industry. One of its editorial functions is to knit more closely together all those industry elements — manufacturers, agents, retailers, the educational echelon and farm advisor groups. It does this by:

- Keeping all segments informed of all industry news.
- Providing feature material designed to help manufacturers and mixers to do a better job, to help dealers sell and to help farm advisors and educational people make sound recommendations.
- Keeping all industry alert to current and proposed government action.
- Providing a channel through which news and advertising can reach all segments of the industry.

This new approach to business journalism for the agricultural chemical industry is being made by a company with 80 years of experience in newsgathering and publishing and one which has built an unchallenged reputation for reliability and service. Advertising of your products and services in Croplife will mean *richer sales fields* for you!

## National Coverage Weekly . . .

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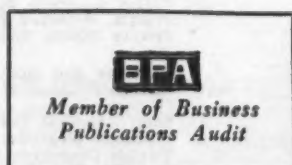
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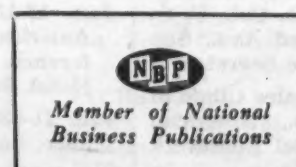


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*sales*  
**...for richer fields**  
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HARRISON 7-6782

**KANSAS CITY**  
612 Board of Trade Bldg.  
VICTOR 2-1350

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